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# ESD Control Selection Guide

**Choose from our extensive range of grounding accessories, packaging, clothing and ESD control equipment**

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# ESD Control Selection Guide

## INTRODUCTION

Many electronic components and assemblies used in high technology products can be damaged or degraded by the sudden exchange of static electrical charges. This Electrostatic Discharge, or ESD, is the reason industries handling susceptible electronic components must take steps to minimise ESD risk.

As industry experts, we offer an extensive selection of Electrostatic discharge control equipment for any workplace environment. Brands range from RS Pro, our high quality, professionally approved own range, to SCS, Charleswater, Menda, EMIT, Electrolube, Vermason and other market-leading brands.

## WHAT IS ESD AND WHAT ARE ITS RISKS?

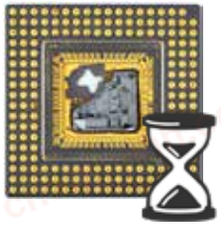
When two items are at different levels of electrostatic charge, i.e. one positively and one negatively charged, they will want to come into balance. If the items are in close enough proximity there can be a rapid, spontaneous transfer of electrostatic charge from one to the other. This is called Electrostatic Discharge or ESD.

ESD is the hidden enemy in a high-tech manufacturing environment. Modern electronic circuitry can be burned or melted when subject to an ESD event which is, in effect, a miniature lightning bolt.

Two types of risk to electronic equipment can occur:



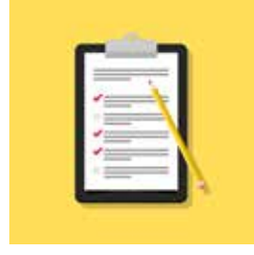
**Catastrophic failure**
Catastrophic failure causes a permanent fault. The ESD event may have caused a metal melt, junction breakdown or oxide failure. Normal inspection is able to detect a catastrophic failure.



**Latent defect**
A latent defect is linked to an ESD event that causes partial degradation. This defect may not be detected by normal inspection and the device can continue to perform as it should. The defect can then cause intermittent or permanent failure at a later time.

## WHY ESD CONTROL?

As electronic technology advances, electronic circuitry gets progressively smaller. As the size of components is reduced so is the microscopic spacing of insulators and circuits within them. Their sensitivity to ESD is increased.



To protect sensitive electronic components and circuitry, ESD protection should be considered whenever and wherever you handle the items. This includes throughout the manufacturing, test, shipping, handling or operational processes, and during field service operations.



## ESD STANDARDS

**EN 61340 Part 5-1: Protection of electronic devices from electrostatic phenomena** is the standard most companies use to build their ESD control plan.



The standard uses a Human Body Model to simulate discharges from a person and increasingly tests an electronic device at higher and higher discharges until it fails. This establishes the device's withstand voltage.

## ESD SENSITIVE COMPONENTS

**The electronic components in the chart below can be damaged by the electrostatic voltages shown.**

| ESD Class | Voltage Rating (V) | Device Names |
|---|---|---|
| Class 0 | 0 to 99 | SAW, JFETS, CCDs, Precision voltage regulator diodes, OP AMP, Thin film resistors, Integrated circuits, Hybrids utilizing class 1 parts, VHSI, CSCRs. |
| Class 1 | 200 to 1,999 | SAW, JFETS, CCDs, Precision voltage regulator diodes, OP AMP, Thin film resistors, Integrated circuits, Hybrids utilizing class 1 parts, VHSI, CSCRs. |
| Class 2 | 2,000 to 3,999 | JFETs, Ics, VHSIC, Precision resistor networks (type RZ), Hybrids utilizing class 2 parts, Low power bipolar transistors. |
| Class 3 | 4,000 to 15,999 | JFETS, OP AMPS, Ics, All other microcircuits not included in class 1 or 2, Small signal diodes, General purpose silicon rectifiers, Opto-electronic devices (LEDs, phototransformers, opto couplers), Resistor chips, Piezo electric crystals, Hybrids using Class 3 parts. |

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# Introduction

## ESD CONTROL PLAN

**How to set up an ESD control plan in your company**
Any business working with ESD sensitive items should set up ESD prevention and control measures in the form of a Control plan, according to **EN 61340 Part 5-1** (see page 2).

Every company will have different processes so each will require its own plan. Steps to set up your Control plan are as follows:

### 1 Define what you are trying to protect

Identify any ESD susceptible items that your company handles. Treat any device that you receive in ESD packaging as a susceptible item.

### 2 Become familiar with the industry standards for ESD control

Read BS EN 61340-5-1 for guidance if you manufacture, process, assemble, install, package, label, service, test, inspect, transport or handle susceptible items.

### 3 Select a grounding/equipotential bonding system

Eliminate differences in potential in your ESD protected area by connecting ESD control elements and personnel to a protective earth, functional earth or an equipotential bonding system.

### 4 Determine a personnel grounding method for operators

Seated operators must use a wrist strap, however standing workers can use a foot grounding system. In some cases both grounding methods will be used.

### 5 Establish and identify your ESD Protected Area (EPA)

Define all departments which will be EPAs. Identify and control access using signs, floor marking and access control measures.
(See page 3 for more).

### 6 Select ESD control products to use in your EPA

Consider products such as work surfaces, flooring, seating, ionisation, shelving, trolleys and clothing.

### 7 Develop a Packaging plan for materials handling and storage

When moving ESD susceptible devices outside a protected area, what packaging will you use?

### 8 Use proper markings for ESD susceptible items, system or packaging



ESD
Susceptibility symbol



ESD
Protective symbol

### 9 Implement a Compliance Verification plan

Document the steps you will take to review, verify, analyse, evaluate and improve your ESD programme. Compliance verification records should be kept.

### 10 Develop a Training plan

Your training plan should specify how personnel who handle or contact ESD sensitive items will undergo training in ESD awareness and prevention.

### 11 Make the ESD Control plan part of your internal quality system

Your ESD control plan should include a list of ESD control items used in the EPA, the Compliance Verification plan and the Training plan.

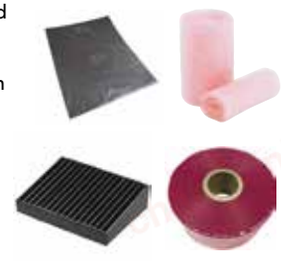
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# ESD Control Selection Guide

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ESD packaging and storage products protect ESD sensitive items from electrostatic fields and electrostatic discharges.

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### 2 ESD TESTING AND MONITORING EQUIPMENT



ESD protection systems need to be checked on a regular basis. This is an important requirement of the ESD Standard.

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### 3 IONISERS



Eliminate both negative and positive charges on items that cannot be grounded.

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### 4 ESD PERSONAL GROUNDING & ESD CLOTHING



Wrist straps and foot grounders are used to ground people in an ESD protected area.

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### 5 ESD MATTING



ESD matting removes electrostatic charges from conductors that are placed on the surface.

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### 6 ESD FIELD SERVICE



Field service kits offer the electronics field service technician a simple and effective means of creating an ESD protected area in the field.

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### 7 ESD FURNITURE



Equip your ESD protected area with suitable ESD safe workbenches, chairs and trolleys to minimise risk from items of furniture.

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### 8 ESD GROUNDING ACCESSORIES, BRUSHES AND PROBES



Earth Bonding points, cords and snaps are used to link objects and people inside an ESD protected area to ground. Brushes and other accessories aid risk free working.

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### 9 ESD TREATMENTS, LOTIONS AND DISPENSERS



ESD safe dispensers are dissipative and designed to protect valuable static sensitive printed circuitry.

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### 10 ESD LABELS & POSTERS




ESD labels and signs are required to properly mark ESD susceptible items inside of packaging and to identify the boundaries of an ESD protected area.

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# ESD Packaging, Storage & Stationery

## INTRODUCTION

During storage and transport, ESD sensitive devices require special packaging to protect them from ESD damage.

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## KEY CONSIDERATIONS

For transport outside an ESD Protected Area (EPA), protection is achieved by enveloping the device in a material with a shielding layer, such as a shielding bag. The envelope is frequently referred to as having the effect of a Faraday Cage. An ESD packaging material will also often provide mechanical protection or protection against contamination by dust or humidity (e.g. moisture barrier or shielding bubble bags).

When storing products inside an EPA (on grounded surfaces), use conductive bags or containers to store your ESD sensitive items. Conductive materials have a low electrical resistance so electrons flow easily across the surface. Charges will go to ground if bags or containers are handled by a grounded operator or are stored on a grounded surface.

## GLOSSARY OF TERMS

### Surface resistance/Surface resistivity

ESD control, packaging and storage products use the terms surface resistance and surface resistivity to define their properties. Both are measures of a material's ability to electrostatically shield or provide dissipation of charge.

Surface resistance, measured in ohms, expresses the ability of a material to conduct electricity between two points on the surface. Its value is dependent on current and voltage and is a measure used to evaluate static-dissipative products where lower resistance characteristics are required. Measurement of surface resistance should be carried out as defined in EN 61340-5-1 (see page 2).

Surface resistivity is a measure used to evaluate products where higher resistance characteristics are required. Measured in ohms per square, it is the resistance measured between two opposite sides of a square on the surface. It's value is not related to the size of the square.

The nature of the product will define whether resistivity (e.g. bins and boxes) or resistance (e.g. foam and film) are used.

### Dissipative, Conductive, Anti-static



Based on their surface resistance, these terms define how easily electric charge can flow over the surface of a material.

### Dissipative

Dissipative materials have a surface resistance of $>1 \times 10^5$ ohms and allow any static charge to be dispersed.

### Conductive

Conductive materials allow an electric charge to be conducted away to a desired earth point. They have a lower surface resistance of $<1 \times 10^5$ ohms.

### Anti-static

Indicates a typically conductive material designed to limit the build-up of static by removing it to earth.

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## BAGS

| Brand | Image | Stock No | Description | Width (mm) | Height (mm) | Closure Type | Dissipative | Conductive | Anti-Static | Static Shielding | Bubble | Moisture Barrier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 182-8792 | Heat Seal Static Shielding Bag, 76×127mm | 76 | 127 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 182-8809 | Heat Seal Static Shielding Bag, 102×152mm | 102 | 152 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 182-8815 | Heat Seal Static Shielding Bag, 127×203mm | 127 | 203 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 287-7739 | Heat Seal Static Shielding Bag, 152×203mm | 152 | 203 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 182-8821 | Heat Seal Static Shielding Bag, 152×254mm | 152 | 254 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 182-8837 | Heat Seal Static Shielding Bag, 203×254mm | 203 | 254 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 287-8221 | Heat Seal Static Shielding Bag, 203×305mm | 203 | 305 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 182-8843 | Heat Seal Static Shielding Bag, 254×305mm | 254 | 305 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 287-7767 | Heat Seal Static Shielding Bag, 254×356mm | 254 | 356 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 415-6977 | Heat Seal Static Shielding Bag, 279×381mm | 279 | 381 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 387-6406 | Heat Seal Static Shielding Bag, 305×406mm | 305 | 406 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 290-9375 | Heat Seal Static Shielding Bag, 305×457mm | 305 | 457 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 387-6412 | Heat Seal Static Shielding Bag, 356×457mm | 356 | 457 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 415-6999 | Heat Seal Static Shielding Bag, 381×457mm | 381 | 457 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 415-7009 | Heat Seal Static Shielding Bag, 457×457mm | 457 | 457 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 287-7773 | Heat Seal Static Shielding Bag, 457×610mm | 457 | 610 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 2 | 431-9465 | Zip-Lock Shielding Bag, 102×102mm 10pcs | 102 | 102 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 2 | 431-9471 | Zip-Lock Shielding Bag, 102×152mm 10pcs | 102 | 152 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 2 | 431-9487 | Zip-Lock Shielding Bag, 152×203mm 10pcs | 152 | 203 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 2 | 431-9493 | Zip-Lock Shielding Bag, 254×305mm 10pcs | 254 | 305 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 2 | 431-9500 | Zip-Lock Shielding Bag, 305×406mm 10pcs | 305 | 406 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 2 | 431-9516 | Zip-Lock Shielding Bag, 457×457mm 10pcs | 457 | 457 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 2 | 431-9538 | Zip-Lock Shielding Bag, 102×152mm 100pcs | 102 | 152 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |

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## BAGS

| Brand | Image | Stock No | Description | Width (mm) | Height (mm) | Closure Type | Dissipative | Conductive | Anti-Static | Static Shielding | Bubble | Moisture Barrier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 431-9544 | Zip-Lock Shielding Bag, 152×203mm 100pcs | 152 | 203 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 431-9550 | Zip-Lock Shielding Bag, 254×305mm 100pcs | 254 | 305 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 431-9566 | Zip-Lock Shielding Bag, 305×406mm 100pcs | 305 | 406 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 1 | 431-9572 | Zip-Lock Shielding Bag, 457×457mm 100pcs | 457 | 457 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 2 | 815-3492 | Shielding Bubble Bag, 255×125mm, 5pcs | 255 | 125 | Flap | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| | 2 | 815-3480 | Shielding Bubble Bag, 255×305mm, 5pcs | 255 | 305 | Flap | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| | 2 | 815-3499 | Shielding Bubble Bag, 255×355mm, 5pcs | 255 | 355 | Flap | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| | 2 | 815-3486 | Shielding Bubble Bag, 305×405mm, 5pcs | 305 | 405 | Flap | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| | 2 | 815-3483 | Shielding Bubble Bag, 505×405mm, 5pcs | 505 | 405 | Flap | ✓ | ✓ | ✓ | ✓ | ✓ | ✗ |
| | 3 | 122-9158 | Dissipative Clear Zip Bag, 75×125mm | 75 | 125 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 3 | 122-9154 | Dissipative Clear Zip Bag, 100×150mm | 100 | 150 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 3 | 122-9155 | Dissipative Clear Zip Bag, 150×200mm | 150 | 200 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 3 | 122-9156 | Dissipative Clear Zip Bag, 200×250mm | 200 | 250 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 3 | 122-9157 | Dissipative Clear Zip Bag, 250×300mm | 250 | 300 | Zipper | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 4 | 287-7852 | Antistatic Pink Bag, 75×125mm | 125 | 75 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 4 | 287-7868 | Antistatic Pink Bag, 100×155mm | 155 | 100 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 4 | 287-7874 | Antistatic Pink Bag, 152×203mm | 203 | 152 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 4 | 287-7880 | Antistatic Pink Bag, 152×229mm | 229 | 152 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 4 | 484-9073 | Antistatic Pink Bag, 155×254mm | 254 | 155 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 4 | 287-7919 | Antistatic Pink Bag, 205×255mm | 255 | 205 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 4 | 287-7903 | Antistatic Pink Bag, 205×305mm | 205 | 305 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 4 | 287-7925 | Antistatic Pink Bag, 254×356mm | 356 | 254 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 4 | 287-7931 | Antistatic Pink Bag, 305×406mm | 406 | 305 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |

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## BAGS

| Brand | Image | Stock No | Description | Width (mm) | Height (mm) | Closure Type | Dissipative | Conductive | Anti-Static | Static Shielding | Bubble | Moisture Barrier |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 356-2343 | Antistatic Bubble Bag, 100×135mm | 135 | 100 | Self Sealing | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ |
| | 1 | 356-2359 | Antistatic Bubble Bag, 130×185mm | 185 | 130 | Self Sealing | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ |
| | 1 | 356-2365 | Antistatic Bubble Bag, 180×235mm | 235 | 180 | Self Sealing | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ |
| | 1 | 356-2371 | Antistatic Bubble Bag, 230×285mm | 285 | 230 | Self Sealing | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ |
| | 1 | 356-2393 | Antistatic Bubble Bag, 305×435mm | 435 | 305 | Self Sealing | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ |
| | 1 | 356-2400 | Antistatic Bubble Bag, 380×435mm | 435 | 380 | Self Sealing | ✗ | ✗ | ✓ | ✗ | ✓ | ✗ |
| | 2 | 397-4291 | Antistatic Gusseted Bag, 300/500×650mm | 300 (depth 500) | 650 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 2 | 356-2179 | Antistatic Gusseted Bag, 460/610×630mm | 460, (depth 610) | 630 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 2 | 356-2191 | Antistatic Gusseted Bag, 460/750×1080mm | 460, (depth 750) | 1080 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 2 | 397-4308 | Antistatic Gusseted Bag, 750/1000×1200mm | 750, (depth 1000) | 1200 | Heat Seal | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| | 3 | 550-072 | Black Conductive Bag, 127×203mm | 203 | 127 | Heat Seal | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| | 3 | 550-088 | Black Conductive Bag, 203×254mm | 254 | 203 | Heat Seal | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| | 3 | 550-094 | Black Conductive Bag, 252×305mm | 305 | 252 | Heat Seal | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| | 3 | 550-101 | Black Conductive Bag, 305×406mm | 406 | 305 | Heat Seal | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| | 3 | 550-117 | Black Conductive Bag, 406×508mm | 508 | 406 | Heat Seal | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| SCS | 4 | 918-5591 | Zip Static Shield Bag, 150×200mm | 152 | 203 | Open Top | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 4 | 918-5608 | Static Shield Bag, 355×405mm | 355 | 405 | Open Top | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| | 5 | 918-5602 | Moisture Barrier Bag, 254×305mm | 254 | 305 | Open Top | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |
| | 5 | 918-5614 | Barrier Bag, 254×610mm | 255 | 610 | Open Top | ✓ | ✓ | ✓ | ✓ | ✗ | ✗ |
| Vermason | 6 | 738-9767 | Statshield Moisture Barrier Bag, 255×760mm | 255 | 760 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |
| | 6 | 738-9763 | Statshield Moisture Barrier Bag, 255×610mm | 254 | 610 | Heat Seal | ✓ | ✓ | ✓ | ✓ | ✗ | ✓ |

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## BINS & BOXES

| Brand | Image | Stock No | Description | Width (mm) | Length (mm) | Height (mm) | Surface Resistivity Range (Ω) | Material | Dissipative | Conductive | Anti-Static |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 815-7003 | Conductive Component Box and Lid | 12 | 15 | 16 | $1 \times 10^4$ – $<1 \times 10^5$ | Thermoplastic | ✗ | ✓ | ✗ |
| | 2 | 217-9883 | SMT Storage Box | 28 | 28 | 28 | $1 \times 10^2$ – $<1 \times 10^5$ | Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 550-864 | Conductive Storage Box XXXS | 40 | 40 | 13.5 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 550-870 | Conductive Storage Box XXS | 55 | 77 | 19 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 287-8091 | Conductive Storage Box XS | 64 | 89 | 16 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 550-886 | Conductive Storage Box S | 86 | 111 | 17 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 217-9221 | Conductive Storage Box M | 106 | 140 | 38 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 420-1386 | Conductive Storage Box L | 126 | 229 | 23 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 287-8108 | Conductive Storage Box XL | 127 | 229 | 32 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 820-810 | Conductive Storage Box XXL | 130 | 232 | 33 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 2 | 420-1409 | Conductive Storage Box XXXL | 126 | 229 | 42 | $1 \times 10^2$ – $<1 \times 10^5$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 3 | 550-319 | Storage Bin S | 100 | 90 | 50 | $< 10^3$ | Carbon, Polypropylene | ✓ | ✓ | ✓ |
| | 3 | 550-325 | Storage Bin M | 100 | 165 | 75 | $< 10^3$ | Carbon, Polypropylene | ✓ | ✓ | ✓ |
| | 3 | 550-331 | Storage Bin L | 240 | 150 | 130 | $< 10^3$ | Carbon, Polypropylene | ✓ | ✓ | ✓ |
| | 4 | 121-8486 | TC4 Storage Bin | 205 | 350 | 132 | $< 10^3$ | Carbon, Polypropylene | ✓ | ✓ | ✓ |
| | 4 | 121-8487 | TC5 Storage Bin | 205 | 350 | 182 | $< 10^3$ | Carbon, Polypropylene | ✓ | ✓ | ✓ |
| | 4 | 121-8488 | TC6 Storage Bin | 420 | 375 | 182 | $< 10^3$ | Carbon, Polypropylene | ✓ | ✓ | ✓ |
| | 5 | 233-496 | Dissipative Transit Box XS | 127 | 175 | 38 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Conductive B Flute cardboard | ✗ | ✓ | ✗ |
| | 5 | 233-503 | Dissipative Transit Box S | 191 | 229 | 64 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Conductive B Flute cardboard | ✗ | ✓ | ✗ |
| | 5 | 539-227 | Dissipative Transit Box M | 216 | 267 | 64 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Conductive B Flute cardboard | ✗ | ✓ | ✗ |
| | 5 | 287-8237 | Dissipative Transit Box L | 267 | 318 | 64 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Carbon, Polypropylene | ✗ | ✓ | ✗ |
| | 5 | 233-519 | Dissipative Transit Box XL | 394 | 521 | 64 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Conductive B Flute cardboard | ✗ | ✓ | ✗ |
| | 5 | 539-233 | Dissipative Transit Box XXL | 318 | 394 | 64 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Conductive B Flute cardboard | ✗ | ✓ | ✗ |

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## BINS & BOXES

| Brand | Image | Stock No | Description | Width (mm) | Length (mm) | Height (mm) | Surface Resistivity Range (Ω) | Material | Dissipative | Conductive | Anti-Static |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CHARLESWATER | 1 | 877-2548 | Circuit Board Box | 267 | 318 | 64 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Fibreboard | ✗ | ✓ | ✗ |
| | 2 | 877-2542 | Circuit Board Box with Foam | 267 | 318 | 64 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Fibreboard, Foam | ✗ | ✓ | ✗ |
| MENDA | 3 | 719-9891 | ESD Dissipative Tool Box | 191 | 368 | 127 | $1 \times 10^5$ – $<1 \times 10^{11}$ | Polypropylene | ✓ | ✗ | ✗ |
| | 4 | 774-0465 | Plastic Carousel Bin S | 125 | 50 | 133 | $1 \times 10^4$ – $<1 \times 10^{10}$ | Plastic, Polypropylene | ✓ | ✗ | ✗ |
| | 4 | 774-0474 | Plastic Carousel Bin M | 125 | 75 | 173 | $1 \times 10^4$ – $<1 \times 10^{10}$ | Plastic, Polypropylene | ✓ | ✗ | ✗ |
| | 4 | 774-0477 | Plastic Carousel Bin L | 125 | 101 | 228 | $1 \times 10^4$ – $<1 \times 10^{10}$ | Plastic, Polypropylene | ✓ | ✗ | ✗ |
| raaco | 4 | 774-0471 | Plastic Carousel Bin XL | 125 | 126 | 300 | $1 \times 10^4$ – $<1 \times 10^{10}$ | Plastic, Polypropylene | ✓ | ✗ | ✗ |
| | 5 | 253-9566 | Conductive Transit Case | 260 | 338 | 57 | $1 \times 10^4$ – $<1 \times 10^{10}$ | Polypropylene | ✓ | ✗ | ✗ |
| | 6 | 236-5286 | Conductive Toolbox | 215 | 426 | 170 | $1 \times 10^4$ – $<1 \times 10^{10}$ | Polypropylene | ✓ | ✗ | ✗ |
| | 7 | 236-4823 | 15-Section Service Box | 225 | 320 | 47 | $1 \times 10^4$ – $<1 \times 10^9$ | Velostat | ✓ | ✗ | ✓ |
| | 7 | 236-4839 | 32-Section Service Box | 225 | 320 | 47 | $1 \times 10^4$ – $<1 \times 10^{10}$ | Polypropylene, Velostat | ✓ | ✗ | ✗ |

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RS PRO

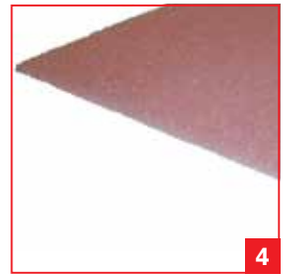
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## FOAM, FILM & WRAP

| Brand | Image | Stock No | Description | Type | Width (mm) | Length (m) | Thickness (mm) | Volume Resistance (Ω) | Surface Resistance (Ω) | Tensile Strength ($N/cm^2$) | Colour | Dissipative | Conductive | Anti-Static | Static Shielding |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 815-3512 | Low Density Conductive Foam S | Foam, Low density | 305 | 0.3 | 6 | $<1 \times 10^3$ | $1 \times 10^2 - \leq 1 \times 10^5$ | 7 | Black | ✗ | ✓ | ✗ | ✓ |
| | 1 | 815-3474 | Low Density Conductive Foam L | Foam, Low density | 1000 | 1 | 6 | $<1 \times 10^3$ | $1 \times 10^2 - \leq 1 \times 10^5$ | 7 | Black | ✗ | ✓ | ✗ | ✓ |
| | 2 | 798-9310 | Low Density Antistatic Foam | Foam, Low density | 1500 | 1 | 6 | n/a | $1 \times 10^5 - < 1 \times 10^{11}$ | 7 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 3 | 815-3509 | High Density Conductive Foam S | Foam, High density | 305 | 0.3 | 6 | $<1 \times 10^3$ | $1 \times 10^2 - \leq 1 \times 10^5$ | 7 | Black | ✗ | ✓ | ✗ | ✓ |
| | 4 | 815-3503 | High Density Conductive Foam L | Foam, High density | 1000 | 1 | 6 | $<1 \times 10^3$ | $1 \times 10^2 - \leq 1 \times 10^5$ | 7 | Black | ✗ | ✓ | ✗ | ✓ |
| | 5 | 798-9326 | High Density Antistatic Foam | Foam, High density | 800 | 1 | 6 | n/a | $1 \times 10^7 - <1 \times 10^{11}$ | 7 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 6 | 815-7012 | Dissipative Stretch Film | Stretch Film | 300 | 0.5 | 0.025 | Not tested | $10^{10}$ | Not tested | Pink | ✓ | ✗ | ✓ | ✗ |
| | 7 | 628-1772 | Antistatic Large-bubble Roll S | Bubble Wrap | 500 | 25 | 12 | Not tested | $10^{10}$ | Not tested | Pink | ✓ | ✗ | ✓ | ✗ |
| | 7 | 628-1693 | Antistatic Large-bubble Roll M | Bubble Wrap | 750 | 25 | 12 | Not tested | $10^{10}$ | Not tested | Pink | ✓ | ✗ | ✓ | ✗ |
| | 7 | 628-1564 | Antistatic Large-bubble Roll L | Bubble Wrap | 1500 | 25 | 12 | Not tested | $10^{10}$ | Not tested | Pink | ✓ | ✗ | ✓ | ✗ |
| | 7 | 356-2315 | Antistatic Small-bubble Roll S | Bubble Wrap | 500 | 50 | 4 | Not tested | $10^{10}$ | Not tested | Pink | ✓ | ✗ | ✓ | ✗ |
| | 7 | 639-1920 | Antistatic Small-bubble Roll M | Bubble Wrap | 750 | 50 | 4 | Not tested | $10^{10}$ | Not tested | Pink | ✓ | ✗ | ✓ | ✗ |
| | 7 | 356-2157 | Antistatic Small-bubble Roll L | Bubble Wrap | 1500 | 50 | 4 | Not tested | $10^{10}$ | Not tested | Pink | ✓ | ✗ | ✓ | ✗ |

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RS PRO

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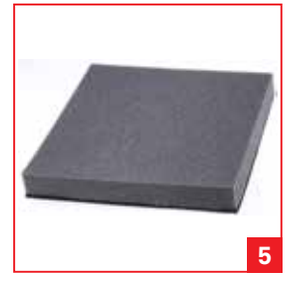













## FOAM, FILM & WRAP

| Brand | Image | Stock No | Description | Type | Width (mm) | Length (m) | Thickness (mm) | Volume Resistance (Ω) | Surface Resistance (Ω) | Tensile Strength (N/cm²) | Colour | Dissipative | Conductive | Anti-Static | Static Shielding |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 125-2348 | Gusseted Shroud S | Gusseted Shroud | 1250 | 1.85 | 80 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,100 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 1 | 125-2349 | Gusseted Shroud M | Gusseted Shroud | 1250 | 1.6 | 80 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,100 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 1 | 125-2350 | Gusseted Shroud L | Gusseted Shroud | 579 | 0.7 | 80 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,100 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 2 | 125-2399 | Black Dissipative ESD Strapping S | Strap | 25.4 | 0.5 | 0.5 | $10^{11}$ | $<10^{11}$ | 14,023.5 | Black | ✓ | ✗ | ✗ | ✗ |
| | 2 | 125-2398 | Black Dissipative ESD Strapping L | Strap | 25.4 | 0.9 | 0.5 | $10^{11}$ | $<10^{11}$ | 14,023.5 | Black | ✓ | ✗ | ✗ | ✗ |
| | 3 | 125-2358 | Black Tubing S | Tube | 76 | 152 | 100 | $10^{5}$ | $<10^{5}$ | 1,000 to 1,300 | Black | ✗ | ✓ | ✗ | ✗ |
| | 3 | 125-2359 | Black Tubing L | Tube | 102 | 152 | 100 | $10^{5}$ | $<10^{5}$ | 1,000 to 1,300 | Black | ✗ | ✓ | ✗ | ✗ |
| | 4 | 125-2351 | Pink Tubing (100mm) | Tube | 100 | 250 | 90 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,200 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 4 | 125-2352 | Pink Tubing (150mm) | Tube | 150 | 250 | 90 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,200 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 4 | 125-2353 | Pink Tubing (200mm) | Tube | 200 | 250 | 90 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,200 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 4 | 125-2354 | Pink Tubing (250mm) | Tube | 250 | 250 | 90 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,200 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 4 | 125-2355 | Pink Tubing (300mm) | Tube | 300 | 250 | 90 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,200 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 4 | 125-2356 | Pink Tubing (400mm) | Tube | 400 | 250 | 90 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,200 | Pink | ✓ | ✗ | ✓ | ✗ |
| | 4 | 125-2357 | Pink Tubing (500mm) | Tube | 500 | 250 | 90 | $10^{11}$ | $<10^{11}$ | 1,000 to 1,200 | Pink | ✓ | ✗ | ✓ | ✗ |
| ideal-tek | 5 | 787-0323 | Replacement foam for PCSA-1 | Foam, Cushioning | 220 | 0.2 | 41 | $10^{4}$ | $10^{3}$ – $10^{5}$ | Not tested | Black/Grey | ✗ | ✓ | ✗ | ✗ |
| | 5 | 787-0320 | Replacement foam for PCSA-2 | Foam, Cushioning | 220 | 0.5 | 40 | $10^{4}$ | $10^{3}$ – $10^{5}$ | Not tested | Black/Grey | ✗ | ✓ | ✗ | ✗ |
| | 5 | 787-0332 | Replacement foam for PCSA-4 | Foam, Cushioning | 350 | 0.5 | 42 | $10^{4}$ | $10^{3}$ – $10^{5}$ | Not tested | Black/Grey | ✗ | ✓ | ✗ | ✗ |

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## TAPE

| Brand | Image | Stock No | Description | Usage Type | Length (m) | Width (mm) | Text/Logo On Tape | Material | Dissipative | Conductive | Anti-Static | Cleanroom | EN 61340-5-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 443-9799 | Polyprop adhesive grid tape 12mm | Packaging | 36 | 12 | Logo | PP | ✓ | ✗ | ✗ | ✗ | ✓ |
| | 1 | 443-9812 | Polyprop adhesive grid tape 18mm | Packaging | 36 | 18 | Logo | PP | ✓ | ✗ | ✗ | ✗ | ✓ |
| | 1 | 443-9828 | Polyprop adhesive grid tape 24mm | Packaging | 36 | 24 | Logo | PP | ✓ | ✗ | ✗ | ✗ | ✓ |
| | 1 | 443-9834 | Polyprop adhesive grid tape 48mm | Packaging | 36 | 48 | Logo | PP | ✓ | ✗ | ✗ | ✗ | ✓ |
| | 2 | 733-980 | PVC antistatic packaging tape | Packaging | 66 | 50 | Attention | PVC | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 2 | 125-2397 | Packing tape in 3 Languages | Packaging | 66 | 50 | Attention | PVC | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 3 | 125-2361 | Black dissipative cover tape | Packaging | 500 | 35 | Blank | Polyethylene | ✓ | ✗ | ✗ | ✗ | ✓ |
| | 3 | 125-2360 | Black dissipative cover tape | Packaging | 1000 | 35 | Blank | Polyethylene | ✓ | ✗ | ✗ | ✗ | ✓ |
| | 4 | 340-7533 | EPA floor marking tape | Floor | 66 | 50 | ESD Protected Area | PVC | ✗ | ✗ | ✓ | ✗ | ✓ |
| Vermason | 5 | 877-2517 | Clear ESD Tape 12mm M | Packaging | 33 | 12 | Blank | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 5 | 877-2510 | Clear ESD Tape 18mm M | Packaging | 33 | 18 | Blank | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 5 | 877-2514 | Clear ESD Tape 24mm M | Packaging | 33 | 24 | Blank | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 5 | 877-2523 | Clear ESD Tape 12mm L | Packaging | 66 | 12 | Blank | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 5 | 877-2526 | Clear ESD Tape 18mm L | Packaging | 66 | 18 | Blank | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 5 | 877-2520 | Clear ESD Tape 24mm L | Packaging | 66 | 24 | Blank | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 5 | 877-2539 | Clear ESD Tape 48mm L | Packaging | 66 | 48 | Blank | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 6 | 877-2497 | Clear ESD Symbol tape 12mm | Packaging | 66 | 12 | Antistatic Tape | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 6 | 877-2491 | Clear ESD Symbol tape 18mm | Packaging | 66 | 18 | Antistatic Tape | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 6 | 877-2501 | Clear ESD Symbol tape 24mm | Packaging | 66 | 24 | Antistatic Tape | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |
| | 6 | 877-2504 | Clear ESD Symbol tape 48 mm | Packaging | 66 | 48 | Antistatic Tape | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ | ✓ |

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## TAPE

| Brand | Image | Stock No | Description | Usage Type | Length (m) | Width (mm) | Text/Logo On Tape | Material | Dissipative | Conductive | Anti-Static | Cleanroom |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vermason | 1 | 877-2508 | Clear ESD Yellow stripe Tape 12mm | Packaging | 66 | 12 | Antistatic Tape | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ |
| | 1 | 832-5376 | Clear ESD Yellow stripe Tape 18mm | Packaging | 66 | 18 | Antistatic Tape | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ |
| | 1 | 832-5385 | Clear ESD Yellow stripe Tape 24mm | Packaging | 66 | 24 | Antistatic Tape | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ |
| | 1 | 832-5388 | Clear ESD Yellow stripe Tape 48mm | Packaging | 66 | 48 | Antistatic Tape | Plastic, Rubber | ✗ | ✗ | ✓ | ✗ |
| | 2 | 877-2494 | High Temperature Masking Tape | Masking | 55 | 12 | Blank | Paper | ✗ | ✗ | ✓ | ✗ |
| | 2 | 832-5382 | ESD High Temp. Masking Tape 18mm | Masking | 55 | 18 | Blank | Paper | ✗ | ✗ | ✓ | ✗ |
| | 2 | 832-5391 | ESD High Temp. Masking Tape 24mm | Masking | 55 | 24 | Blank | Rubber | ✗ | ✗ | ✓ | ✗ |
| | 2 | 832-5394 | ESD High Temp. Masking Tape 48mm | Masking | 55 | 48 | Blank | Rubber | ✗ | ✗ | ✓ | ✗ |
| | 3 | 877-2481 | Shielding Grid Tape 24mm | EMI Shielding | 36 | 24 | ESD Symbol | Plastic, Rubber | ✗ | ✓ | ✗ | ✗ |
| | 3 | 877-2485 | Shielding Grid Tape 48mm | EMI Shielding | 36 | 48 | ESD Symbol | Plastic, Rubber | ✗ | ✓ | ✗ | ✗ |
| Hi-bond tapes | 4 | 468-419 | Hi-Bond Low-Stat Polyimide Tape 12mm | Masking | 33 | 12 | Blank | Polyamide | ✗ | ✗ | ✓ | ✓ |
| | 4 | 468-415 | Hi-Bond Low-Stat Polyimide Tape 19mm | Masking | 33 | 19 | Blank | Polyamide | ✗ | ✗ | ✓ | ✓ |
| | 4 | 468-447 | Hi-Bond Low-Stat Polyimide Tape 25mm | Masking | 33 | 25 | Blank | Polyamide | ✗ | ✗ | ✓ | ✓ |

## TAPE DISPENSER

| Brand | Image | Stock No | Description | For Use With | Tape Width | Type |
|---|---|---|---|---|---|---|
| Vermason | 5 | 877-2532 | ESD Tape Dispenser | 76mm Core Tape | 50 mm | Tabletop |

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## CABINETS

| Brand | Image | Stock No | Description | Cabinet Height (mm) | Cabinet Width (mm) | Cabinet Depth (mm) | Drawer Height (mm) | Drawer Width (mm) | Drawer Depth (mm) | Compartments per Insert | Drawers per Cabinet | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 909-6987 | ESD Drawers S | 290 | 310 | 180 | 62 | 92 | 170 | 1 | 12 | ESD Cabinet |
| | 1 | 909-6978 | ESD Drawers M | 290 | 310 | 180 | 40 | 69 | 170 | 1 | 24 | ESD Cabinet |
| | 2 | 909-6984 | ESD Drawers L | 550 | 310 | 180 | 62 | 92 | 170 | 1 | 24 | ESD Cabinet |
| | 2 | 909-6980 | ESD Drawers XL | 550 | 310 | 180 | 40 | 69 | 170 | 1 | 48 | ESD Cabinet |
| raaco | 3 | 774-0459 | ESD Turntable for 1200 Cabinet | 1760 | 680 | n/a | 1760 | 680 | 680 | 1 | 12 | Turntable Storage |
| | 4 | 774-0480 | ESD Bin Carousel | 1600 | 655 | n/a | 1600 | 655 | 655 | 1 | 288 | Turntable Storage |
| | 5 | 051-9217 | 18 Drawer Storage Cabinet | 420 | 307 | 146 | 60 | 91 | 154 | 1 | 18 | Cabinet |
| | 6 | 051-9201 | 36 Drawer Storage Cabinet | 420 | 307 | 146 | 41 | 67 | 153 | 1 | 36 | Cabinet |
| | 6 | 816-271 | 48 Drawer Storage Cabinet | 555 | 307 | 146 | 41 | 67 | 153 | 1 | 48 | Cabinet |
| | 7 | 252-0203 | 45 Drawer Storage Cabinet | 417 | 306 | 150 | 52 | 35 | 135 | 1 | 45 | Cabinet |
| | 8 | 252-0196 | 24 Drawer Storage Cabinet | 555 | 306 | 150 | 87 | 135 | 57 | 1 | 24 | Cabinet |
| | 6 | 252-0180 | 60 Drawer Storage Cabinet | 552 | 306 | 150 | 52 | 135 | 35 | 1 | 60 | Cabinet |
| | 9 | 183-7465 | 6 Drawer Storage Cabinet | 435 | 357 | 255 | 57 | 320 | 240 | 1 | 6 | Cabinet |

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## DRAWERS & INSERTS

| Brand | Image | Stock No | Description | Cabinet Height (mm) | Cabinet Width (mm) | Cabinet Depth (mm) | Drawer Height (mm) | Drawer Width (mm) | Drawer Depth (mm) | Compartments per Insert | Drawers per Cabinet | Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 575-728 | 18 Compartment Drawer | n/a | n/a | n/a | 20 | 250 | 275 | 18 | 18 | Drawer |
| | 1 | 575-734 | 36 Compartment Drawer | n/a | n/a | n/a | 20 | 275 | 250 | 36 | 36 | Drawer |
| | 2 | 484-9607 | Antistatic drawer dividers L | n/a | n/a | n/a | 87 | 49 | 2 | 24 | n/a | Divider |
| | 2 | 484-9613 | Antistatic drawer dividers S | n/a | n/a | n/a | 64 | 31 | 1 | 48 | n/a | Divider |
| raaco | 3 | 774-0443 | Cabinet Drawer S | n/a | n/a | n/a | 41 | 55 | 153 | 1 | n/a | Drawer |
| | 3 | 774-0452 | Cabinet Drawer M | n/a | n/a | n/a | 41 | 67 | 153 | 1 | n/a | Drawer |
| | 3 | 774-0455 | Cabinet Drawer L | n/a | n/a | n/a | 50 | 91 | 154 | 1 | n/a | Drawer |
| | 4 | 774-0468 | Cabinet Drawer XL | n/a | n/a | n/a | 57 | 320 | 240 | 1 | n/a | Drawer |
| | 4 | 252-0225 | Antistatic drawer dividers | n/a | n/a | n/a | n/a | 31 | n/a | 1 | n/a | Divider |
| | 5 | 774-0483 | ESD Drawer Insert S | n/a | n/a | n/a | 47 | 39 | 55 | 1 | n/a | Insert |
| | 5 | 774-0487 | ESD Drawer Insert M | n/a | n/a | n/a | 47 | 55 | 79 | 1 | n/a | Insert |
| | 5 | 774-0496 | ESD Drawer Insert L | n/a | n/a | n/a | 47 | 79 | 109 | 1 | n/a | Insert |
| | 6 | 183-7487 | 16 Tray Cabinet Insert Pack | n/a | n/a | n/a | 315 | 220 | 47 | 1 | n/a | Insert |
| | 6 | 183-7471 | 32 Tray Cabinet Insert Pack | n/a | n/a | n/a | 315 | 220 | 47 | 1 | n/a | Insert |

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## WALL PANELS, RACKS, POSTS & KITS

| Brand | Image | Stock No | Description | Type | Height (mm) | Width (mm) | Depth (mm) | Conductive |
|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 121-2704 | SMD Reel Rack with 10 Dividers | Rack | 155 | 390 | 250 | ✗ |
| | 2 | 121-2705 | Divider for SMD Reel Rack | Divider | 250 | 155 | n/a | ✗ |
| | 3 | 121-2707 | Surface Mount Reel Rack | Rack | 110 | 400 | 250 | ✗ |
| | 4 | 121-2708 | SMD Reel Container | Rack | 178 | 330 | 560 | ✗ |
| | 5 | 287-8079 | L-shaped PCB rack S | Rack | 275 | 210 | 95 | ✓ |
| | 5 | 287-8085 | L-shaped PCB rack L | Rack | 350 | 210 | 130 | ✓ |
| | 6 | 550-016 | Conductive PCB holder | Holder | 14 | 353 | 254 | ✓ |
| | 7 | 406-9788 | Antistatic conductive PCB holder kit | Holder | 15 | 354 | 255 | ✓ |
| raaco | 8 | 519-223 | Antistatic table top | Kit | 388 | 500 | 305 | ✗ |

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## OFFICE SUPPLIES & STATIONERY

| Brand | Image | Stock No | Description | Quantity Included | Height (mm) | Type | Width (mm) | Depth (mm) | Dissipative | Conductive | Anti-Static |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 121-2703 | ESD Self-Stick Notes | 50 | 76 | Sticky Notes | 102 | n/a | ✓ | ✗ | ✗ |
| | 2 | 733-946 | A4 Static dissipative ring binder | 1 | 320 | Ring Blinder | Spine 40 | Ring 25 | ✓ | ✗ | ✗ |
| | 3 | 443-9840 | A4 antistatic ESD-safe clear binder | 5 | 315 | Clear Binder | 235 | 4 | ✗ | ✗ | ✓ |
| | 4 | 733-952 | A4 Static dissipative document sleeve | 100 | 297 | Document Sleeve | 220 | n/a | ✗ | ✗ | ✓ |
| | 5 | 815-7006 | 14L Conductive Waste Bin | 1 | 320 | Waste Bin | 285 | n/a | ✗ | ✓ | ✓ |
| | 6 | 125-2403 | 40L Conductive Waste Bin | 1 | 530 | Waste Bin | 330 | 530 | ✗ | ✓ | ✗ |
| | 7 | 125-2404 | Pink Waste bags | 10 | 750 | Waste Bag | 330 | 530 | ✗ | ✗ | ✓ |
| | 8 | 815-7000 | Dissipative Polyethylene Refuse Sacks | 500 | 450 | Refuse Sack | 600 | n/a | ✓ | ✗ | ✗ |
| MENDA | 9 | 121-2702 | Drinking cup | 1 | 195 | Cup | n/a | n/a | ✗ | ✓ | ✗ |

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# ESD Testing & Monitoring Equipment

## INTRODUCTION

Test your systems regularly to be confident they are providing the ESD protection you need. Various testing methods are described in the ESD standard EN 61340 Part 5-1: Protection of electronic devices from electrostatic phenomena. The standard also specifies acceptable values.

## Contents

Test Meters ..... Page 20
Continuous Monitors ..... Page 22
Testers and Auditors..... Page 22



## KEY CONSIDERATIONS

Our testing and monitoring range consists of three equipment types. Test meters comprise a group of units for testing the integrity of ESD control products, from Surface Resistivity testers to Wristband testers.

Continuous monitors eliminate time spent carrying out frequent integrity checks, as ESD integrity is monitored continuously through the day. Testers and auditors covers products used to confirm the accuracy of test meters.

Testing and monitoring can be viewed as two distinct families: personnel testing and EPA (ESD Protected Area) testing.

The personnel testing family offers a choice of wrist strap and/or footwear testers or test stations, for testing personnel grounding systems before entering an EPA. Other testers are designed for use inside the EPA to test resistances in-situ. This helps reduce queues at the test station at the beginning of a shift. They can also be used to monitor personnel grounding on a continuous basis (continuous monitors).

The EPA testing family consist of equipment to measure electrical resistance and electrostatic fields. Resistance meters are used to qualify an EPA whereas electrostatic field meters help locate electrostatic charges, identify insulative materials or serve to balance ionisers.

## GLOSSARY OF TERMS

**Test point**
ESD testing and monitoring equipment is specifically designed to evaluate one or more of the physical test points on personnel, work stations, equipment and/or surfaces. A test point may be a person's wrist, ankle, foot, work surface ancillary equipment (Ioniser etc) or earth bonding point etc.

Each of these can be tested to ensure conformance with expected readings and to ensure continuance of personnel, equipment and component safety.

**Parking station**
A feature of an ESD monitor which allows a worker to 'park' or store their wrist strap to the monitor when temporarily leaving the work station. Parking of the wrist strap has to be achieved within a pre-determined time to avoid an activating an alarm

**Supervisor monitoring**
A feature of some ESD testing & monitoring equipment whereby a secondary jack point exists for use by a second worker or for supervisory monitoring.

**EOS detection**
Some ESD testing and monitoring equipment has the capability to detect overvoltage conditions which can lead to electrostatic overstress (EOS) and an electrostatic discharge event.

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## ESD TEST METERS

| Brand | Image | Stock No | Description | Equipment Type | Test Point | Power Source | Width (mm) | Height (mm) | Depth (mm) |
|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 776-8315 | AC Outlet Analyser with UK Plug | Tester | Wrist | Mains, UK | 51 | 76 | 51 |
| | 2 | 122-9143 | Wrist strap Tester, 9V battery | Tester | Wrist | Battery | 70 | 90 | 30 |
| | 3 | 126-8850 | Low Resistance Tester | Tester | Chair, Floor, Surface, Wrist | Battery | 50 | 120 | 20 |
| | 2 | 253-0727 | Portable easy to use wrist band tester | Tester | Wrist | Battery, Mains | 70 | 115 | 26 |
| | 4 | 733-996 | Wrist band/heel grounder test station | Tester | Wrist & Foot | Battery | 70 | 115 | 26 |
| | 2 | 418-0879 | RSCAL(2530727) WBT-02 wristband tester | Tester | Wrist | Battery, Mains | 70 | 115 | n/a |
| | 4 | 418-0885 | RSCAL(733996), wristband test station | Tester | Wrist & Foot | Battery | 70 | 115 | 26 |
| | 5 | 877-2488 | Wrist Strap & Footwear Tester+Footplate | Tester | Wrist & Foot | Mains, EU/UK | 143 | 90 | n/a |
| | 6 | 776-8318 | Analogue Surface Resistance Meter | Analogue Surface Resistance Test Kit | Surface | Battery | 305 | 89 | 241 |
| | 7 | 821-1264 | Surface Resistivity Tester | Resistivity Tester | Surface | Battery | 230 | 305 | 75 |

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## ESD TEST METERS

| Brand | Image | Stock No | Description | Equipment Type | Test Point | Power Source | Width (mm) | Height (mm) | Depth (mm) |
|---|---|---|---|---|---|---|---|---|---|
| EMIT | 1 | 776-8321 | Digital Static Field Meter | Tester | Surface | Battery | 70 | 126 | 24 |
| | 2 | 776-8324 | Ionisation Test Kit | Tester | Surface | Battery | 70 | 126 | 24 |
| CHARLESWATER | 3 | 685-8745 | Combo wrist strap footwear tester | Tester | Wrist & Foot | Battery, Mains | 140 | 80 | 40 |
| | 3 | 685-8754 | Combo wriststrap footwear tester w/stand | Tester | Wrist & Foot | Battery, Mains | 140 | 80 | 40 |
| | 3 | 685-8757 | Calibration unit, for combo tester | Calibrator | Wrist & Foot | Not Required | 110 | 80 | 25 |
| Vermason | 4 | 877-2536 | Surface Resistance Meter Kit | Meter | Surface | Battery | 100 | 210 | 40 |
| | 5 | 877-2551 | ESD Survey Kit UK | Survey Kit | Surface, ioniser, | Mains, UK | 350 | 230 | n/a |
| | 5 | 877-2554 | ESD Survey Kit, Europe | Survey Kit | Surface, ioniser, | Mains, EU/UK | 350 | 560 | 230 |

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## ESD CONTINUOUS MONITORS

| Brand | Image | Stock No | Description | Supply Voltage (V) | Terminal Type | Number of Operators | Number of Worksurfaces | Supervisor Monitoring | Parking Station | Charge Detection | EOS Detection | Width (mm) | Length (mm) | Height (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 126-8852 | Earth Bonding Point Integrity Monitor | 220 ac | Banana | n/a | | | | | | 76 | 51 | 51 |
| | 2 | 126-8851 | Body Voltage Monitor | 5 dc | Banana | 1 | 1 | ✓ | ✗ | ✗ | ✓ | 69 | 61 | 30 |
| | 3 | 877-2472 | Multi Mount Continuous Monitor, 220V | 24 ac | 10 Snap, 4 Banana jack | 1 | 1 | ✗ | ✓ | ✗ | ✗ | 52.8 | 98.3 | 22.9 |
| | 4 | 877-2475 | ESD AC Adapter | For Multi Mount Continuous Monitor (877-2472) | | | | | | | | | | |
| SCS | 5 | 918-5618 | Work Station Monitor | 100 - 120 ac | Snap | 1 | 1 | ✗ | ✗ | ✗ | ✗ | 79 | 165 | 35 |
| | 5 | 126-8845 | Iron Man Plus Monitor | 100 - 240 ac | Jack | 1 | 1 | ✗ | ✗ | ✓ | ✓ | 61 | 66 | 22 |
| EMIT | 6 | 685-8763 | Dual operator continuous monitor, 220V | 220 ac | Phone | 2 | 2 | ✓ | ✓ | ✗ | ✗ | 280 | 130 | 74 |
| | 7 | 685-8767 | Zero volt continuous monitor, dual wire | 100 - 240 ac | 10 Snap, Phone, Push In, Screw | 2 | 2 | ✓ | ✓ | ✗ | ✗ | 119 | 142 | 66 |
| Vermason | 8 | 685-8751 | Workstation continuous mini monitor 220V | 220 ac | 10 Snap, 4 Snap | 1 | 1 | ✗ | ✓ | ✗ | ✗ | 53 | 70 | 18 |
| | 9 | 685-8760 | AC adaptor, monitor, IEC input, 220V | 220 ac | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

## ESD TESTERS AND AUDITORS

| Brand | Image | Stock No | Description | Test Type | Width (mm) | Height (mm) | Depth (mm) | Weight (kg) | Battery Type (V) |
|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 10 | 763-0945 | Wrist Band Tester Calibration Unit | Heel, Wrist | 61 | 40 | 96 | 0.1 | 9 |
| | 10 | 761-0711 | Calibration Unit 763-0945 - Calibrated Version | Heel, Wrist | 61 | 40 | 96 | 0.1 | 9 |

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# Ionisers

## INTRODUCTION

An ioniser creates great numbers of positively and negatively charged ions. Fans help the ions flow over the work area. Ionisation can neutralise static charges on an insulator in a matter of seconds, thereby reducing their potential to cause ESD damage.

### Contents


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## KEY CONSIDERATIONS

**Bench top ionisers** benefit from the ability to be moved easily between workstations. However, care should be taken to ensure that items normally on the bench will not obstruct the flow of ionised air.

**Overhead ionisation** was established to solve the problem of items on a bench blocking the flow of ionised air. In addition, the downward airflow is more consistent over the entire bench. Overhead ionisers are ideal for areas where bench space is limited.

**Forced air ionisers** use compressed air or nitrogen to neutralise static charges in localised areas – they are a quick point-and-shoot option.

The main advantage of this type is the ability to provide a strong air blast to help dislodge contamination, while the ionisation in the air stream eliminates the static attraction of the particles at the same time.

## GLOSSARY OF TERMS

**Offset voltage**
A preset output voltage that enables a balanced amount of positive and negative ions to be created and emitted by the ioniser.

**Air flow**
Some ionisers need airflow to operate properly. These will either require an available airflow or may incorporate a fan to provide airflow. Compressed gas ionisers require a gas source and filtration compatible with use in an ESD protected area.

**Minimum/Maximum air pressure**
These values refer to the settings that should be made on the pressure regulator that feeds the ioniser from a clean air or nitrogen supply.

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## IONISERS

| Brand | Image | Stock No | Description | Type | Depth (mm) | Width (mm) | Height (mm) | Supply Voltage (V ac) | Offset Voltage (V) | Number of Fans | Air Flow (cfm) | Fan Speed | Plug Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 340-7511 | Zero stat gun with ion detector | Ionized Air Gun | 114 | 165 | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | 2 | 877-2466 | Benchtop Ioniser | Bench Top | 80 | 150 | 240 | 220 | 3 → 25 | 1 | 50 – 100 | Variable | Type F - Schuko plug (NS) |
| | 3 | 877-2469 | Overhead Ioniser S | Overhead | 610 | 165 | 89 | 220 | 10 → 25 | 2 | 100 – 200 | Variable | Type F - Schuko plug (NS) |
| | 3 | 877-2463 | Overhead Ioniser L | Overhead | 940 | 165 | 89 | 220 | 10 → 25 | 3 | 150 – 300 | Variable | Type F - Schuko plug (NS) |
| SCS | 4 | 126-8843 | Benchtop Air Ionizer with Power Source | Bench Top | 104 | 181 | 219 | 100 – 240 | 15 | 1 | 112 | Variable | NS |
| | 5 | 918-5595 | Benchtop Air Ioniser Euro Version | Bench Top | 114 | 216 | 229 | 100 – 240 | 15 | 1 | 112 | Variable | NS |
| | 6 | 126-8844 | Overhead Air Ionizer with Power Source | Overhead | 172 | 1080 | 120 | 100 – 240 | 15 | 3 | 100 – 200 | Variable | NS |
| EMIT | 7 | 818-8108 | Mini Zero Volt Ioniser | Bench Top | 40 | 90 | 140 | 24 | 5 → 25 | 2 | 33 – 51 | Variable | Euro Plug, UK, USA |
| | 7 | 684-2920 | Bench top zero volt ioniser | Bench Top | 79 | 152 | 241 | 220 | 3 → 25 | 1 | 50 – 100 | Variable | Type F - Schuko plug (NS) |
| | 8 | 121-2700 | OH Ioniser with light S | Overhead | 566 | 168 | 99 | 220 | 10 → 20 | 2 | 100 – 200 | Variable | Type F - Schuko plug (NS) |
| | 8 | 121-2701 | OH Ioniser with light L | Overhead | 947 | 168 | 99 | 220 | 10 → 20 | 3 | 150 – 300 | Variable | Type F - Schuko plug (NS) |
| | 8 | 684-2942 | Chargebuster overhead ioniser | Overhead | 89 | 940 | 165 | 220 | 10 → 20 | 3 | 150 – 300 | Variable | Type F - Schuko plug (NS) |
| | 8 | 684-2954 | Zero volt overhead ioniser | Overhead | 88 | 1066 | 165 | 220 | 0 – 5 | 3 | 195 – 300 | Variable | Type F - Schuko plug (NS) |



NS = Not Supplied (plug available separately)

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## IONISING AIR GUNS

| Brand | Image | Stock No | Description | Type | Power Source | Activation Type | Voltage (V ac) | Hose Length (m) | Minimum Air Pressure (PSI) | Maximum Air Pressure (PSI) |
|---|---|---|---|---|---|---|---|---|---|---|
| SCS | 1 | 918-5611 | Ionised Air Gun | Ionized Air Gun | Mains - Power Adapter to be purchased separatley | Hand trigger | 230 | 2.1 | 20 | 65 |
| EMIT | 2 | 684-2958 | Ion python controller, hand gun | Hand Gun | Mains - Power Cord to be purchased separatley | Hand trigger | 220 | 2.1 | 30 | 100 |
| | 3 | 684-2967 | Ion python controller, air nozzle | Fixed Nozzle | Mains - Power Cord to be purchased separatley | Foot switch | 220 | 1.5 | 30 | 100 |

## IONISATION ACCESSORIES

| Brand | Image | Stock No | Description | Accessory Type | Suitable For |
|---|---|---|---|---|---|
| EMIT | 4 | 761-7141 | Ionizer Mounting Arm | Ionizer Mounting Arm | MIT 50670 (RS 6842920) |
| SCS | 5 | 918-5605 | ESD Power Adapter | Adaptor | n/a |

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# ESD Personal Grounding & ESD Clothing

## INTRODUCTION

People are the primary source of electrostatic charges. As it is impractical to prevent the generation of these charges it is necessary to ground personnel who work within an EPA.

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## KEY CONSIDERATIONS

For people who work mainly sitting down, grounding is best achieved with the use of a wristband connected to an extendible coiled cord, also known as wrist strap. It, in turn, is connected to an earth bonding point (EBP) or continuous monitor.

**ESD gloves** allow any charges to travel to ground through the wearer. They protect the hands from sharp edges and they protect components and assemblies from body oils and perspiration.

**Foot grounders** or conductive shoes are used for earthing mobile personnel. This personnel grounding method can only function when used in conjunction with suitable ESD flooring.

**Garments** are used to control electronic charges generated by personnel working in EPAs. They form a conductive grid around the upper body so that any electrostatic fields are held within the garment.

## GLOSSARY OF TERMS

**Lead resistance**
A resistor embedded within a wrist strap allows any static charge to discharge completely over time, typically less than 1 second. A 1MOhm resistor is often used, with higher values being embedded when voltages encountered may be higher

**Non marking**
Non-floor marking characteristic of a heel or shoe grounder.

**Single wire / Dual wire**
Dual wire wrist strap provides redundancy. If one dual wire wrist strap conductor is severed, the operator retains a reliable path-to-ground through the other wire.

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## WRIST STRAPS

| Brand | Image | Stock No | Description | Termination stud size (mm) | Wrist Strap Size | Re-usable / Disposable | Single Wire / Dual Wire |
|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 923-7911 | Disposable Wrist Strap | n/a | Adjustable | Disposable | Not applicable |
| | 2 | 392-163 | Malestud fully adj fabric wristband | 10 | Adjustable | Reusable | Single Wire |
| | 2 | 798-9290 | Stud Adjustable Fabric Wrist Strap | 4 | Adjustable | Reusable | Single Wire |
| | 3 | 798-9294 | Stud Antiallergenic Wrist Strap | 4 | Adjustable | Reusable | Single Wire |
| | 2 | 552-876 | Stud large fixed fabric wrist band | 10 | Large | Reusable | Single Wire |
| | 2 | 552-882 | Stud small fixed fabric wrist band | 10 | Small | Reusable | Single Wire |
| | 2 | 798-9278 | Stud Adjustable Tab Free WristStrap | 10 | Adjustable | Reusable | Single Wire |
| | 2 | 253-6769 | Anti allergenic fabric wrist band | 10 | Adjustable | Reusable | Single Wire |
| | 4 | 787-3108 | Adjustable Metal Wrist Band | 10 | Adjustable | Reusable | Single Wire |
| | 4 | 663-229 | Male press stud adj metal wristband | 10 | Adjustable | Reusable | Single Wire |
| SCS | 5 | 838-0777 | Adjustable Thermoplastic Wrist Strap (4mm Stud) | 4 | Adjustable | Reusable | Single Wire |
| | 5 | 838-0789 | Adjustable Thermoplastic Wrist Strap (3.4mm Stud) | 3.4 | Adjustable | Reusable | Single Wire |
| | 6 | 838-0733 | Adjustable Elastic Nylon Wrist Strap (3.4mm Stud) | 3.4 | Adjustable | Reusable | Dual Wire |
| | 7 | 838-0727 | Metal Wrist Strap (5mm Stud) | 5 | Large | Reusable | Single Wire |
| | 7 | 838-0723 | Metal Wrist Strap (4mm Stud) | 4 | Medium | Reusable | Single Wire |

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## WRIST STRAPS & CORDS

| Brand | Image | Stock No | Description | Termination stud size (mm) | Wrist Strap Size | Re-usable / Disposable | Single Wire / Dual Wire |
|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 287-7379 | Stud-banana adj fabric band cordset | 10 | Adjustable | Reusable | Single Wire |
| | 1 | 798-9288 | Stud-Banana Fabric Wrist Strap+Cord | 4 | Adjustable | Reusable | Single Wire |
| | 1 | 798-9297 | Stud Adjustable Wrist Strap+Cord | 4 – 10 | Adjustable | Reusable | Single Wire |
| | 1 | 287-7385 | Stud-stud adj fabric band/cord set | 10 | Adjustable | Reusable | Single Wire |
| | 2 | 798-9275 | Stud-Banana Mini Wrist Strap+Cord | 10 | Adjustable | Reusable | Single Wire |
| | 3 | 287-7414 | Stud-banana adj wrist band/cord set | 10 | Adjustable | Reusable | Single Wire |
| | 3 | 287-7420 | Stud-stud adj wrist band/cord set | 10 | Adjustable | Reusable | Single Wire |
| | 4 | 798-9281 | Stud-Stud Metal Wrist Strap+Cord | 4 – 10 | Adjustable | Reusable | Single Wire |
| | 5 | 798-9284 | Stud-Banana Wrist Strap & Cord Set | 4 | Adjustable | Reusable | Single Wire |
| | 6 | 798-9272 | Stud-Banana Mini Wrist Strap+Cord | 4 | Adjustable | Reusable | Single Wire |
| | 6 | 787-3101 | Stud-Stud Adjustable Wrist Band | 10 | Adjustable | Reusable | Single Wire |
| SCS | 7 | 838-1174 | Press Stud Anti-Static Wrist Strap | 4 | Adjustable | Reusable | Single Wire |
| | 8 | 838-0786 | Press Stud Anti-Static Wrist Strap | 4 | Adjustable | Reusable | Single Wire |
| | 8 | 838-1300 | Press Stud Anti-Static Wrist Strap | 4 | Adjustable | Reusable | Single Wire |
| Vermason | 9 | 685-8782 | Grounding Wrist Strap & Cord Set | 4 | Adjustable | Reusable | Dual Wire |

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## CORDS

| Brand | Image | Stock No | Description | Cord Type | Stud Size (mm) | Cord Length (m) | Lead Resistance (MΩ) | Termination Type |
|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 287-7470 | Grounding connection cord | Connecting | 10 | 0.1 | 1 | Press Stud - Press Stud |
| | 2 | 129-4975 | Connecting cord with wire | Connecting | 10 | 0.1 | 0 | Press Stud - Press Stud |
| | 3 | 123-5613 | Grounding Cord for Turntable | Connecting | 5 | 1.0 | 0 | Press Stud - Ring Terminal |
| | 4 | 273-6717 | Stud-stud cord | Connecting | 10 | 1.8 | 1 | Press Stud - Press Stud |
| | 5 | 552-898 | Stud-banana cord | Connecting | 10 | 1.8 | 2 | Press Stud - Banana Plug/Croc Clip |
| | 4 | 291-9489 | Stud - stud cord | Connecting | 10 | 1.8 | 2 | Press Stud - Press Stud |
| | 5 | 287-7391 | Stud-banana cord | Connecting | 10 | 3.6 | 2 | Press Stud - Banana Plug/Croc Clip |
| | 5 | 273-6701 | Stud-banana cord | Connecting | 10 | 1.8 | 1 | Press Stud - Banana Plug/Croc Clip |
| | 4 | 552-905 | Stud - stud cord | Connecting | 10 | 1.8 | 4 | Press Stud - Press Stud |
| | 6 | 129-4874 | Grounding connection cord L | Connecting | 10 | 2.0 | 1 | Press Stud - Press Stud |
| | 6 | 129-4969 | Grounding connection cord M | Connecting | 10 | 1.0 | 1 | Press Stud - Press Stud |
| | 7 | 798-9335 | Low Profile Ground Cord | Low Profile | 10 | 4.5 | 1 | Press Stud - Ring Terminal |
| | 8 | 798-9304 | Stud-Banana Coiled Cord | Connecting | 4 | 2.0 | 1 | Banana plug |
| | 9 | 129-4931 | Earthing Wire Stud-banana | Connecting | 10 | 1.0 | 1 | Press Stud - Banana Socket |
| | 9 | 287-7486 | Earthing Wire Stud-banana | Connecting | 10 | 4.5 | 1 | Press Stud - Banana Socket |
| | 10 | 122-9153 | EPA Ground Earth Bonding Cord | Connecting | 10 | 4.0 | 1 | Banana Plug |
| | 4 | 798-9307 | Stud Coiled Cord | Connecting | 4 | 1.0 | 1 | Press Stud |
| SCS | 11 | 838-1253 | Floor Ground Cord Male | Low Profile | 10 | 4.6 | 1 | 10mm Stud - Ring Terminal |
| | 11 | 838-0767 | Cord No Resistor | Standard | 10 | 3.0 | 0 | 10mm Stud - 10mm Stud |
| | 12 | 838-1316 | Grounding System for Wrist Strap/Mat | Standard | 10 | 4.6 | 1 | 10mm Stud - Ring Terminal |
| | 13 | 838-1313 | Wrist Strap Grounding System | Standard | n/a | 3.0 | 1 | 2 × Banana Plug |
| | 14 | 838-1310 | Press Stud Anti-Static Wrist Strap | Connecting | 4 | 1.5 | 1 | Banana Plug/Croc Clip |

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## TOE & HEEL STRAPS

| Brand | Image | Stock No | Description | Attachment Type | Resistance (Ω) | Type | Non Marking | Reusable/Disposable | Elastic/Non Elastic |
|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 466-8559 | Nylon disposable heel grounder for shoe | Adhesive | $10^5$ | Heel Grounder | ✓ | Disposable | Non-Elastic |
| | 2 | 363-2931 | Antistatic heel grounder with adj strap | Quick Lok | $10^7$ | Heel Grounder | ✗ | Reusable | Non-Elastic |
| | 2 | 340-7606 | Non-marking heel grounder with adj strap | Hook & Loop | $10^7$ | Heel Grounder | ✗ | Reusable | Non-Elastic |
| | 3 | 287-7565 | Blue antistatic heel grounder | Elasticated Hook & Loop | $10^7$ | Heel Grounder | ✗ | Reusable | Non-Elastic |
| | 3 | 217-9265 | Dayglow antistatic heel grounder | Hook & Loop | $10^7$ | Heel Grounder | ✗ | Reusable | Non-Elastic |
| | 4 | 126-8846 | stat-a-REST Foot Ground S | n/a | $1 \times 10^8$ | Foot Grounder | ✓ | Reusable | Non-Elastic |
| | 4 | 126-8847 | stat-a-REST Foot Ground M | n/a | $1 \times 10^8$ | Foot Grounder | ✓ | Reusable | Non-Elastic |
| | 4 | 126-8848 | stat-a-REST Foot Ground L | n/a | $1 \times 10^8$ | Foot Grounder | ✓ | Reusable | Non-Elastic |
| | 4 | 126-8849 | stat-a-REST Foot Ground XL | n/a | $1 \times 10^8$ | Foot Grounder | ✓ | Reusable | Non-Elastic |
| | 5 | 122-9150 | Disposable Heel Grounder | Adhesive | $5 \times 10^4 - 8 \times 10^5$ | Foot Grounder | ✓ | Disposable | Non-Elastic |
| | 6 | 122-9151 | ESD Dispenser for Disposable Heel Grounders | For use with 122-9150 | | | | | |
| SCS | 7 | 838-1192 | Economy Heel Grounder (ESD) | Hook & Loop | $<1 \times 10^8$ | Heel Grounder | ✓ | Reusable | Non-Elastic |
| | 7 | 838-0711 | Shoe Grounder with 1 Megohm Resistor | Hook & Loop | $<1 \times 10^8$ | Heel Grounder | ✓ | Reusable | Non-Elastic |
| | 7 | 838-1180 | Heel Grounder Cup Style 1 Meg Resistor | Hook & Loop | $<1 \times 10^8$ | Heel Grounder | ✓ | Reusable | Non-Elastic |
| | 7 | 838-1209 | Heel Grounder High Visibility | D Ring | $<1 \times 10^8$ | Heel Grounder | ✓ | Reusable | Non-Elastic |
| | 8 | 838-1237 | Toe Grounder | Hook & Loop | $<1 \times 10^8$ | Toe Grounder | ✓ | Reusable | Non-Elastic |

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## LAB COATS AND SHIRTS

| Image | Brand | Description | Closure Type | Gender | Reusable/ Disposable | Dissipative | Conductive | Anti-Static | Size | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | S | M | L | XL | XXL |
|  | RS PRO | ESD Unisex Lab Coat, white | Button | Unisex | Reusable | ✓ | ✕ | ✕ | 789-8084 | 789-8087 | 789-8081 | 789-8090 | 789-8093 |
|  | RS PRO | ESD Mens Lab Coat, white | Button | Men | Reusable | ✓ | ✕ | ✕ | | 327-3037 | 327-3043 | 327-3065 | |
|  | RS PRO | ESD Mens Polo Shirt, blue | Snaps | Men | Reusable | ✓ | ✕ | ✕ | | 810-2826 | 810-2820 | 810-2839 | |
|  | RS PRO | Static Dissipative Unisex Polo Shirt, blue | Button | Unisex | Reusable | ✕ | ✕ | ✓ | | | 443-9727 | | |

## SECURITY IDENTIFICATION BADGES & ACCESSORIES

| Image | Brand | Description | Breakaway Neck Strap | Conductive | Dissipative | Includes | Length | Material | Type | Width | Stock No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  | RS PRO | Black Polypropylene Rigid Plastic Badge Holder | No | Yes | No | Clip Holder | 90 mm | 55 mm | Polypropylene Rigid Plastic | Badge Holder | 815-7019 |

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## GLOVES

| Brand | Image | Description | Material | Latex Free | Reusable/Disposable | Size | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | S | M | L | XL |
| RS PRO | 1 | Super grip surface gloves, 1 pair | PET | ✓ | Reusable | | 356-2208 | 356-2214 | 356-2220 |
| | 1 | PVC smooth palm surface gloves, 1 pair | PET | ✓ | Reusable | | 356-2236 | 356-2258 | |
| | 2 | Antistatic finger cot x100 | Latex | ✗ | Disposable | 266-1786 | 266-2868 | 266-2874 | 266-2896 |
| | 2 | Antistatic finger cot x720 | Latex | ✗ | Disposable | 241-8144 | 241-8403 | 241-8425 | 266-2903 |
| | 2 | ESD Pink Powder Free Fingercots x720 | Latex | ✗ | Reusable | 829-5168 | 829-5177 | 829-5170 | 829-5174 |
| Ansell | 3 | HyFlex ESD Nitrile Foam Coated Glove, 1 pair | Nitrile, Nylon | ✓ | Reusable | | 806-4706 | 806-4715 | 806-4718 |

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## SAFETY SHOES & BOOTS

| Brand | Image | Description | Series | Safety Rating | Anti Static | Water Resistant | Penetration Resistant | UK 3 / EU 35 | UK 3.5 / EU 36 | UK 4 / EU 37 | UK 5 / EU 38 | UK 6 / EU 39 | UK 6.5 / EU 40 | UK 7 / EU 41 | UK 8 / EU 42 | UK 9 / EU 43 | UK 10 / EU 44 | UK 10.5 / EU 45 | UK 11 / EU 46 | UK 12 / EU 47 | UK 13 / EU 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| uvex | 1 | Black Safety Trainer | Uvex 1 | S1 | ✓ | ✓ | ✗ | 130-4493 | 130-4494 | 130-4495 | 130-4496 | 130-4497 | 130-4498 | 130-4499 | 130-4500 | 130-4501 | 130-4502 | 130-4503 | 130-4504 | 130-4505 | |
| | 2 | Black/Yellow Safety Trainer | Uvex 1 | S2 | ✓ | ✓ | ✗ | 130-4530 | 130-4531 | 130-4532 | 130-4533 | 130-4534 | 130-4535 | 130-4536 | 130-4537 | 130-4538 | 130-4539 | 130-4540 | 130-4541 | 130-4542 | |
| | 3 | Blue/Grey Safety Trainer | Uvex 1 | S1 | ✓ | ✗ | ✗ | | 130-4506 | 130-4507 | 130-4508 | 130-4509 | 130-4510 | 130-4511 | 130-4512 | 130-4513 | 130-4514 | 130-4515 | 130-4516 | 130-4517 | |
| | 4 | Black/Orange Leather Safety Shoe | Uvex 2 | S3 | ✓ | ✓ | ✓ | | | | 127-8512 | 127-8513 | | 127-8514 | 127-8515 | 127-8516 | 127-8517 | | 127-8518 | 127-8519 | 127-8520 |
| | 5 | Blue/Grey Safety Boot | Uvex 1 | S1 | ✓ | ✗ | ✗ | | 130-4518 | 130-4519 | 130-4520 | 130-4521 | 130-4522 | 130-4523 | 130-4524 | 130-4525 | 130-4526 | 130-4527 | 130-4528 | 130-4529 | |
| | 6 | Black/Orange Leather Safety Boot | Uvex 2 | S3 | ✓ | ✓ | ✓ | | | | 127-8521 | 127-8522 | | 127-8523 | 127-8524 | 127-8525 | 127-8526 | | 127-8527 | 127-8528 | 127-8529 |
| Dickies | 7 | Grey/Blue Safety Shoe | Liberty | SP1 | ✓ | ✗ | ✓ | | | | | 161-2625 | | 161-2626 | 161-2627 | 161-2628 | 161-2629 | | 161-2630 | 161-2631 | |
| | 8 | Grey/Blue Safety Boot | Liberty | SP1 | ✓ | ✗ | ✓ | | | | | 161-2632 | | 161-2633 | 161-2634 | 161-2635 | 161-2636 | | 161-2637 | 161-2638 | |
| Jallatte | 9 | Black ESD Safety Trainers | J-NUDE | S1P | ✓ | ✗ | ✓ | 914-0794 | 914-0804 | 914-0807 | 914-0801 | 914-0810 | 914-0813 | 914-0817 | 914-0826 | 914-0829 | 914-0823 | 914-0832 | 914-0835 | 914-0839 | |
| | 10 | Black Safety Shoes | J-NUDE | S1P | ✓ | ✗ | ✓ | 914-0756 | 914-0750 | 914-0769 | 914-0762 | 914-0766 | 914-0775 | 914-0778 | 914-0772 | 914-0781 | 914-0784 | 914-0788 | 914-0797 | 914-0790 | |
| | 11 | Black Safety Shoes | J&J | S3 | ✓ | ✓ | ✓ | | | | | 913-4519 | 913-4528 | 913-4521 | 913-4525 | 913-4534 | 913-4537 | 913-4531 | 913-4540 | 913-4543 | |

## OVER SHOE COVERS

| Brand | Image | Stock No | Description | Quantity Per Package | Material | Anti-Slip Sole |
|---|---|---|---|---|---|---|
| RS PRO | 12 | 340-7656 | ESD safe low cost groundable bootie | 50 | Polypropylene | ✓ |

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# ESD Matting

## INTRODUCTION

ESD protective matting aids in the prevention of damage to ESD sensitive items and assemblies from Electrostatic Discharge. There are two different types of matting available: ESD working surface matting and ESD floor matting.

## Contents

Matting.....Page 35



## KEY CONSIDERATIONS

For electronics manufacturing, the ESD Standard recommends a resistance to ground (RG) for working surface matting of $1 \times 10^4$ to less than $1 \times 10^9$ ohms. The bench mat needs to be grounded using a ground wire from the surface connecting to the common point ground which in return is linked to ground, preferably equipment ground. Best practice is that ground connections use firm fitting connecting devices such as metallic crimps, snaps and banana plugs to connect to designated ground points. The use of alligator clips is not recommended.

ESD floor matting is an integral part of a flooring / footwear system which is a personnel grounding alternative for standing or mobile workers. Any static charges will quickly and effectively drain through the foot grounders or shoes and ESD floor to Ground. The ESD Standard requires the resistance of the person/footwear/flooring to be less than $3,5 \times 10^7$ ohms (resistance in series of operator plus footwear plus floor). It is therefore recommended to use conductive flooring (RG < $1 \times 10^6$ ohms) as the resistance can increase with dirt.

## GLOSSARY OF TERMS

**Buried layer**
Refers to a mat comprising 3-layers where a conductive layer is sandwiched between two static-dissipative layers. Buried layer is also known as 3-layer.

**2-layer**
This describes an ESD-safe mat that consists of a surface dissipative layer and a lower conductive layer.

**Table runner**
A long bench or floor mat. Can be in excess of 15 metres.

**Dissipative**
Dissipative materials have a surface resistance of >$1 \times 10^5$ ohms and allow any static charge to be dispersed.

**Conductive**
Conductive materials allow an electric charge to be conducted away to a desired earth point. They have a lower surface resistance of <$1 \times 10^5$ ohms.

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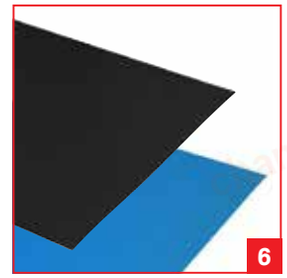


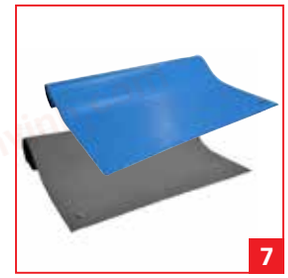













## MATTING

| Brand | Image | Stock No | Description | Length (cm) | Width (cm) | Thickness (mm) | Colour | Use Type | Number of Material Layers | Work Surface Resistance (Ω) |
|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 787-2111 | Buried Layer Workstation Mat kit | 240 | 120 | 3 | Blue | Bench, Floor | 3 | $1 \times 10^6 - 1 \times 10^8$ |
| | 2 | 787-2102 | Buried Layer Matting M | 120 | 60 | 3 | Blue | Bench | 3 | $1 \times 10^6 - 1 \times 10^8$ |
| | 2 | 787-2118 | Buried Layer Matting L | 300 | 120 | 3 | Blue | Bench, Floor | 3 | $1 \times 10^6 - 1 \times 10^8$ |
| | 3 | 815-7016 | Dissipative/Conductive Work station Mats | 120 | 120 | 2 | Beige | Bench, Floor | 2 | $1 \times 10^6 - 1 \times 10^8$ |
| | 4 | 466-1643 | 3-Layer Vinyl Mat M Blue | 120 | 60 | 3.2 | Blue | Bench | 3 | $1 \times 10^6 - 1 \times 10^8$ |
| | 4 | 466-1659 | 3-Layer Vinyl Mat M Grey | 120 | 60 | 3.2 | Grey | Floor | 3 | $1 \times 10^6 - 1 \times 10^8$ |
| | 4 | 466-1665 | 3-Layer Vinyl Mat L Blue | 180 | 120 | 3.2 | Blue | Bench | 3 | $1 \times 10^6 - 1 \times 10^8$ |
| | 4 | 466-1671 | 3-Layer Vinyl Mat L Grey | 180 | 120 | 3.2 | Grey | Bench | 3 | $1 \times 10^6 - 1 \times 10^8$ |
| | 4 | 787-2114 | Workstation Conductive Mat Kit | 120 | 60 | 1.5 | Black | Bench | 1 | $1 \times 10^6 - 1 \times 10^8$ |
| | 5 | 122-9146 | ESD Safe Mat S | 90 | 60 | 1 | Grey | Bench | 2 | $<1 \times 10^9$ |
| | 5 | 122-9147 | ESD Safe Mat M | 120 | 60 | 1 | Grey | Bench | 2 | $<1 \times 10^9$ |
| | 6 | 122-9144 | Dissipative Mat Blue | 120 | 120 | 1.5 | Blue | Bench | 2 | $<1 \times 10^5$ (Bottom), $1 \times 10^6 - <1 \times 10^9$ (Top) |
| | 6 | 122-9145 | Dissipative Mat Grey | 120 | 120 | 1.5 | Grey | Bench, Floor | 2 | $<1 \times 10^5$ (Bottom), $1 \times 10^6 - <1 \times 10^9$ (Top) |
| | 7 | 121-2713 | Table Runner Blue S | 1520 | 60 | 1.8 | Blue | Floor | 2 | $<10^9$ |
| | 7 | 121-2717 | Table Runner Blue L | 1520 | 120 | 1.8 | Blue | Bench, Floor | 2 | $<10^9$ |
| | 7 | 121-2712 | Table Runner Grey S | 1520 | 60 | 1.5 | Grey | Bench | 2 | $<10^9$ |
| | 7 | 121-2714 | Table Runner Grey M | 1520 | 90 | 1.8 | Grey | Bench, Floor | 2 | $<10^9$ |
| | 7 | 121-2716 | Table Runner Grey L | 1520 | 120 | 1.8 | Grey | Bench, Floor | 2 | $<10^9$ |

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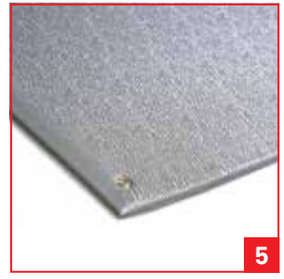

























## MATTING

| Brand | Image | Stock No | Description | Length (cm) | Width (cm) | Thickness (mm) | Colour | Use Type | Number of Material Layers | Work Surface Resistance (Ω) |
|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 787-3114 | Bench Mat | 120 | 60 | 2 | Black | Bench, Floor | 1 | $10^6$ |
| | 2 | 787-3111 | Conductive Rubber Mat Grey | 120 | 60 | 2 | Grey | Bench | 2 | $10^8$ |
| | 2 | 787-3139 | Conductive Rubber Mat Green | 120 | 60 | 2 | Green | Bench | 2 | $10^8$ |
| | 3 | 340-7640 | Lightweight Field Service Mat | 3.80 | 50 | 2 | Red | Bench, Floor | 2 | $<10^8$ |
| | 4 | 798-9266 | Dissipative 3-Layer Work Mat | 5.80 | 45 | 9.5 | Blue | Table | 3 | $10^6 - 10^9$ |
| | 1 | 787-3136 | Conductive Bench Floor Mat | 120 | 69 | 2 | Black | Table | 1 | $10^8$ |
| | 5 | 787-3123 | Anti-Fatigue Mat | 90 | 60 | 9 | Grey | Table | 1 | $1 \times 10^9 - 1 \times 10^{10}$ |
| | 1 | 787-3120 | Black ESD Floor Mat | 120 | 60 | 3 | Black | Table | 1 | $10^4$ |
| COBA europe | 6 | 185-8406 | Static Dissipative Mat M | 150 | 90 | 9 | Grey | Table | 1 | $1 \times 10^9 - 1 \times 10^{10}$ |
| | 6 | 185-8399 | Static Dissipative Mat L | 1830 | 90 | 9 | Grey | Table | 1 | $1 \times 10^9 - 1 \times 10^{10}$ |
| SCS | 7 | 838-1231 | Dissipative Vinyl 3-Layer Mat | 9.10 | 60.9 | 3.4 | Blue | Table | 3 | $<10^9$ |
| | 8 | 838-0701 | Dissipative Table Mat Blue | 120 | 60 | 3.5 | Blue | Bench | 3 | $<10^9$ |
| | 8 | 838-1338 | Dissipative Table Mat Grey | 120 | 60 | 3.5 | Grey | Bench | 3 | $<10^9$ |
| Vermason | 9 | 738-9754 | Statfree Bench Mat M | 90 | 60 | 2 | Blue | Bench | 2 | $1\times10^6 \leq - \leq 1\times10^8$ |
| | 9 | 738-9757 | Statfree Bench Mat L | 120 | 60 | 2 | Blue | Floor | 2 | $1\times10^6 \leq - \leq 1\times10^8$ |
| | 9 | 738-9751 | Statfree Bench Mat XXL | 1000 | 122 | 2 | Blue | Floor | 2 | $1\times10^6 \leq - \leq 1\times10^8$ |

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# ESD Field Service

## INTRODUCTION

It is essential to create an ESD Protected Area when Service Engineers undertake on-site repairs and maintenance.

### Contents

Field Kits.....Page 38
Vacuums & Accessories.....Page 38

## KEY CONSIDERATIONS

Utilising equipotential bonding and a common point ground system for connecting static control elements including operator, worksurface and equipment, field service kits are manufactured from low charging materials that limit charge generation. When properly connected, the field service kit mat will share the charge from conductive objects when they are placed on the surface.

Vacuums are designed for precise removal and collection of dry dust particles and debris from electrostatic sensitive devices.

## GLOSSARY OF TERMS

**Development board kit**
This is a product designed to create a working space acting as a temporary ESD Protected Area.

**(ESD) Safe vacuum**
A vacuum cleaner with hose and accessories designed of a conductive or dissipative material to enable electrostatic charge to be removed via the supply earth connection.



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## FIELD KITS

| Brand | Image | Stock No | Description | Mat Length (mm) | Mat Width (mm) | Mat Thickness (mm) | Cord Length (m) | Mat Resistance (Ω) |
|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 681-1235 | Antistatic lightweight field service kit | 380 | 510 | 0.75 | 4 | $1 \times 10^6 - 1 \times 10^{10}$ |
| RS PRO | 2 | 681-1231 | Antistatic heavy duty field service kit | 590 | 550 | 0.75 | 4 | $1 \times 10^6 - 1 \times 10^8$ |
| RS PRO | 3 | 123-5614 | Development Board ESD Benchtop Kit - UK | 298 | 450 | 2 | 2.4 | $<1 \times 10^5$ |
| RS PRO | 3 | 123-5615 | Development Board ESD Benchtop Kit - EU | 299 | 450 | 3 | 2.4 | $<1 \times 10^5$ |
| SCS | 4 | 918-5598 | Field Service Kit with Adjustable Strap | 559 | 610 | 0.48 | 1.5 | $1 \times 10^6 - 1 \times 10^9$ |
| ESD SYSTEMS.com | 5 | 220-9940 | Conductive Workstation Kit | Floor mat:1200, Bench mat: 750 | Floor mat:1500, Bench mat: 1220 | Floor mat:2.5, Bench mat: 2 | 4 | $1 \times 10^6 - 1 \times 10^9$ |
| ESD SYSTEMS.com | 6 | 252-4621 | Workbench Kit RSKN118 | 1200 | 600 | 2 | 4 | $1 \times 10^6 - 1 \times 10^8$ |

## VACUUMS & ACCESSORIES

| Image | Brand | Stock No | Description | Supply Voltage (V ac) | Type |
|---|---|---|---|---|---|
|  | SCS | 103-4052 | Safe Vacuum | 220/240 | Vacuum |
|  | SCS | 838-1228<br>103-4053 | Type 2 Filter for 497ABF Vacuum | n/a | Filter |

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# ESD Furniture

## INTRODUCTION

Furnish your ESD Protected Area (EPA) with static dissipative workbenches, chairs and other equipment to help protect sensitive equipment and assemblies and minimise risk due to static build up.

## Contents

Workbenches.....Page 40
Chairs.....Page 40
Trolleys and Carts.....Page 40

## KEY CONSIDERATIONS

Chairs and workbenches explicitly designed for use in the electronics industry will prevent the build up of static by dissipating it safely to earth. ESD-safe seating will often have castors constructed of a dissipative or conductive material, enabling charge to be safely removed.

Take this into account when selecting suitable furniture for your ESD protected area, as well as the weight and size of items you will be handling or transporting.

ESD-safe trolleys should be used to transport sensitive components and our models conform to EN 61340 Part 5-1: Protection of electronic devices from electrostatic phenomena (see page 2).

As static can build up anywhere on a work bench, all working surfaces of a bench should be static dissipative. That way electronics assemblies and tools can be placed anywhere without risk. If tools are placed on a non-ESD dissipative surface, attract static, and used to work on an electronics assembly, the chances of damage will rise.



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## WORKBENCHES

| Brand | Image | Stock No | Description | Material | Maximum Load (kg) | Width (mm) | Length (mm) | Bench Height (mm) |
|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 125-2405 | Classic Workbench | Steel | 300 | 700 | 1500 | 650 – 950 |
| | 2 | 125-2406 | Classic Workbench with shelf and overhead light | Steel | 300 | 700 | 1500 | 650 – 950 |
| | 3 | 125-2407 | Classic Workbench with shelf, overhead light, power panel and drawer | Steel | 300 | 700 | 1500 | 650 – 950 |
| | 4 | 125-2408 | UK 4-Socket power supply for workbench above | Aluminium | n/a | n/a | n/a | n/a |
| | 4 | 125-2409 | EU 4-Socket power supply for workbench above | Aluminium | n/a | n/a | n/a | n/a |

## CHAIRS

| Brand | Image | Stock No | Description | Back Adjustable | Colour | Height Adjustable | Minimum Seat Height (cm) | Maximum Seat Height (cm) | Seat Material | Weight Capacity (kg) | Wheeled |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 5 | 125-2401 | Lab Stool | ✗ | Black | ✓ | 43 | 63 | Polyurethane | 4 | ✓ |
| | 6 | 125-2400 | Fabric Lab Stool | ✓ | Grey | ✓ | 43 | 63 | Fabric | 7.5 | ✓ |

## TROLLEYS AND CARTS

| Brand | Image | Stock No | Description | Brakes | Frame Material | Load Capacity (kg) | Overall Height (mm) | Platform Length (mm) | Platform Width (mm) | Wheel Diameter (mm) | Wheel Features | Wheel Material | Wheel Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 7 | 125-2402 | 2 Level Metal Trolley | ✓ | Metal | 200 | 1030 | 760 | 460 | 75 | Braked, Swivel | Rubber | Castor |

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# ESD Grounding Accessories, Brushes and Probes

## INTRODUCTION

Within an EPA, all surfaces, objects, people and ESD sensitive devices are kept at the same electrical potential. This is achieved by linking all objects and people to ground using earth bonding accessories.

## Contents

Grounding Accessories ..... Page 42
Brushes..... Page 45
Probes ..... Page 46

## KEY CONSIDERATIONS

Earth bonding point plugs or bars should be installed at each workstation and should be connected directly to a verified electrical system ground or to a verified grounding bus which is connected to the protective earth ground. Only one groundable point should be installed on a working surface. Both surfaces and wrist straps can be grounded via an Earth bonding point plug or bar.

Straight cords are used to connect fixed elements in an EPA to ground.

Various studs, snaps and kits are available to create earth grounding points on bench and floor mats which connect ground cords. The connectors must be riveted through all layers of a mat.

## GLOSSARY OF TERMS

**ESD brush**
A brush consisting of dissipative bristle material designed to absorb any generated static and remove it to earth via the conductive material of the handle.

**ESD probe**
For manipulating components, these are often made of nylon or wood. Both materials absorb moisture allowing them to be safely used in an ESD environment.



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## GROUNDING ACCESSORIES

| Brand | Image | Stock No | Description | Stud Size (mm) | Accessory Type | Plug Type / Termination |
|---|---|---|---|---|---|---|
| RS PRO | 1 | 129-4947 | ESD Adapter - 10 mm Stud to 4 mm Banana Socket | 10 | Adapter | n/a |
| | 2 | 250-4144 | ESD Crocodile Clip with Stud | 10 | Crocodile Clip | n/a |
| | 3 | 298-3957 | ESD Earth Bonding Box with Stud x 3 | 10 | Earth Bonding Box | Ring Terminal |
| | 4 | 392-135 | ESD Earth Bonding Box with Stud, 4 mm Socket x 2 | 10 | Earth Bonding Box | Ring Terminal |
| | 5 | 298-3941 | ESD Earth Bonding Box with Stud, 4 mm Socket x 2 | 10 | Earth Bonding Box | Ring Terminal |
| | 5 | 298-3935 | ESD Earth Bonding Box with 4 mm Socket x 3 | n/a | Earth Bonding Box | Ring Terminal |
| | 6 | 287-7492 | ESD Earth Bonding Bracket with Stud x 3 | 10 | Earth Bonding Bracket | Ring Terminal |
| | 7 | 298-3963 | ESD Earth Bonding Bracket with Grounding Post x 1 | n/a | Earth Bonding Bracket | Ring Terminal |
| | 8 | 298-3913 | ESD Earth Bonding Bracket with Stud, 4 mm Stud x 2 | 10 | Earth Bonding Bracket | Ring Terminal |
| | 8 | 287-7509 | ESD Earth Bonding Bracket with 4 mm Banana Stud x 3 | n/a | Earth Bonding Bracket | Ring Terminal |

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## GROUNDING ACCESSORIES

| Brand | Image | Stock No | Description | Stud Size (mm) | Accessory Type | Plug Type / Termination |
|---|---|---|---|---|---|---|
| RS PRO | 1 | 392-157 | ESD Earth Bonding Plug with Stud | 10 | Earth Bonding Plug | UK |
| | 2 | 298-3878 | ESD Earth Bonding Plug with Stud x 3 | 10 | Earth Bonding Plug | UK |
| | 1 | 287-7537 | ESD Earth Bonding Plug with Stud | 10 | Earth Bonding Plug | UK |
| | 3 | 287-7559 | ESD Earth Bonding Plug with Studs | 10 | Earth Bonding Plug | European |
| | 4 | 298-3884 | ESD Earth Bonding Plug with Grounding Post x 2 | n/a | Earth Bonding Plug | UK |
| | 3 | 287-7543 | ESD Earth Bonding Plug with Studs | 10 | Earth Bonding Plug | European |
| | 3 | 122-9159 | ESD Earth Bonding Plug with Studs | n/a | Earth Bonding Plug | European Schuko |
| | 5 | 298-3890 | ESD Earth Bonding Plug with Stud, Banana Socket x 2 | 10 | Earth Bonding Plug | UK |
| | 6 | 186-5476 | ESD Earth Bonding Plug with Stud x 3 | 10 | Earthing Sheet | n/a |
| | 6 | 190-1285 | ESD Earth Bonding Plug with 1 × 6mm, 2 × 10mm connectors | n/a | n/a | n/a |
| | 7 | 291-9467 | ESD Earth Stud Installation Tool | n/a | Earth Stud Installation Tool | n/a |
| | 8 | 539-205 | ESD Earth Stud Kit with Studs & Post | 10 | Earth Stud Kit | n/a |
| | 9 | 287-7571 | ESD Earthing Plate with Stud x 5 | 10 | Earthing Plate | n/a |
| | 10 | 287-7486 | ESD Earthing Wire Stud with Stud | 10 | ESD Turntable | n/a |
| | 10 | 121-2709 | ESD Dissipative Turntable - 318mm | n/a | Female Snap | n/a |
| | 10 | 121-2710 | ESD Dissipative Turntable - 394mm | n/a | Rack Bonding Point | n/a |
| | 11 | 264-0414 | ESD Female Snap with 10 mm Snap | n/a | Snaps & Studs | n/a |

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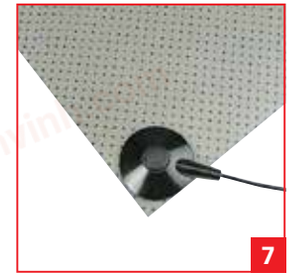













## GROUNDING ACCESSORIES

| Brand | Image | Stock No | Description | Stud Size (mm) | Accessory Type | Plug Type / Termination |
|---|---|---|---|---|---|---|
| RS PRO | 1 | 392-141 | ESD Rack Bonding Point with Stud | 10 | Universal Snap Kit | n/a |
| | 2 | 291-9596 | ESD Snap with Stud | 10 | Adapter | Euro Plug, UK |
| | 3 | 287-7701 | ESD Snap with 10 mm Socket | n/a | Earth Bonding Plug | European Schuko |
| | 4 | 122-9148 | ESD Snap with 10 mm Socket | n/a | Earth Bonding Plug | European Schuko |
| SCS | 5 | 918-5605 | ESD Power Adapter | n/a | ESD Bench Top Turntable | n/a |
| Vermason | 6 | 823-3655 | ESD Bench Top Turntable | n/a | n/a | n/a |
| ESD SYSTEMS.com | 7 | 449-4459 | ESD Earthing Sheet with 10 mm Snap | n/a | n/a | n/a |

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## BRUSHES

| Brand | Image | Stock No | Description | Bristle Material | Bristle Length (mm) | Bristle Width (mm) | Handle Material | Handle Shape | Handle Length (mm) | Dissipative | Conductive | Anti-Static |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 287-8170 | Antistatic Circular Brush | Conductive Nylon and Pig Hair | 12 | 6 | Conductive Plastic | Round | 140 | ✗ | ✓ | ✗ |
| | 2 | 125-0302 | Conductive PP Brush | Nylon | 20 | 50 | Polypropylene | Flat | 144 | ✓ | ✓ | ✗ |
| | 3 | 287-8186 | Antistatic Toothbrush | Dissipative Plastic | 20 | 18 | Conductive Plastic | Flat | 225 | ✓ | ✓ | ✗ |
| | 4 | 287-8209 | Antistatic Nail Brush | Dissipative Plastic | 20 | 40 | Conductive Plastic | Curved | 70 | ✓ | ✓ | ✗ |
| MENDA | 5 | 719-9854 | Dissipative Brush Flat S | Nylon | 19 | 0.4 | Conductive Carbon Loaded Polypropylene | Flat | 150 | ✓ | ✓ | ✗ |
| | 8 | 719-9857 | Dissipative Brush Flat M | Nylon | 22 | 0.4 | Conductive Carbon Loaded Polypropylene | Flat | 168 | ✓ | ✓ | ✗ |
| | 6 | 719-9851 | Dissipative Brush Flat L | Nylon | 19 | 0.4 | Conductive Carbon Loaded Polypropylene | Flat | 178 | ✓ | ✓ | ✗ |
| | 7 | 719-9845 | Dissipative Brush Round | Horses Hair, Synthetic | 6 | 0.4 | Conductive Carbon Loaded Polypropylene | Round | 155 | ✓ | ✓ | ✗ |
| | 9 | 719-9860 | Dissipative Brush Curved | Nylon | 22 | 0.4 | Conductive Carbon Loaded Polypropylene | Curved | 100 | ✓ | ✓ | ✗ |
| BERNSTEIN | 10 | 834-8139 | ESD Brush | Natural | 15 | 6 | Conductive Handle | Round | 150 | ✓ | ✓ | ✓ |
| | 11 | 834-8133 | ESD Brush | Natural | 18 | 20 | Conductive Handle | Flat | 150 | ✓ | ✓ | ✓ |

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## PROBES

| Brand | Image | Stock No | Description | Probe Type | Material | Length (mm) | Dissipative | Conductive | Anti-Static |
|---|---|---|---|---|---|---|---|---|---|
| CHARLES WATER | 1 | 877-2558 | Stainless Steel Probe Kit | Needle Point | Stainless Steel | 108 | ✕ | ✓ | ✕ |
| MENDA | 2 | 719-9832 | ESD nylon probe | Point Blade | Nylon | 152 | ✕ | ✕ | ✓ |
| | 3 | 719-9848 | ESD nylon probe | Point Screw Driver | Nylon | 177 | ✕ | ✕ | ✓ |
| | 4 | 719-9839 | ESD nylon probe | Fork Blade | Nylon | 171 | ✕ | ✕ | ✓ |
| | 5 | 719-9835 | ESD nylon probe | Spudger | Nylon | 139 | ✕ | ✕ | ✓ |
| | 6 | 719-9841 | ESD nylon probe | Point Blade | Wood | 177 | ✕ | ✕ | ✓ |

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# ESD Treatments, Lotions & Dispensers

## INTRODUCTION

Regular insulative items (e.g. a plastic cup) hold charges and cannot be grounded; therefore, the charge cannot dissipate in a controlled way. This could lead to static damage of nearby sensitive components as there can be a rapid, spontaneous transfer of electrostatic charge.

To protect ESD sensitive items, insulative items should be replaced with dissipative or conductive materials, conductors need to be grounded.

## Contents

Treatments & Lotions.....Page 48
Dispensers .....Page 49



## KEY CONSIDERATIONS

Operators working with soldering irons or performing cleaning tasks at their ESD workstation will be using water or some sort of cleaning agent. ESD dissipative dispensers have ESD properties embedded in the bottle and are safe to use inside an EPA.

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## TREATMENTS & LOTIONS

| Brand | Image | Stock No | Description | Dispenser Type | Capacity (ML) | Dissipative | Conductive | Anti-Static |
|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 265-5848 | Anti-static foam cleaner | Spray | 200 | ✗ | ✗ | ✓ |
| | 2 | 514-486 | Anti-static hand pump spray | Spray | 240 | ✗ | ✗ | ✓ |
| ELECTROLUBE THE SOLUTIONS PEOPLE | 3 | 192-1469 | Antistatic foam cleanser | Spray | 400 | ✗ | ✗ | ✓ |
| | 4 | 313-4421 | Antistatic foaming cleaner | Spray | 300 | ✗ | ✗ | ✓ |
| | 5 | 155-8184 | Anti-static spray | Spray | 250 | ✗ | ✗ | ✓ |
| | 6 | 432-5836 | Antistatic glass & screen cleaner | Spray | 250 | ✗ | ✗ | ✓ |
| | 7 | 432-5870 | Antistatic pure cotton wipes | Wipe | n/a | ✗ | ✗ | ✓ |
| | 3 | 448-184 | Antistatic Foam Cleanser | Spray | 400 | ✗ | ✗ | ✓ |
| CRC | 8 | 131-6168 | Antistatik 100 | Spray | 200 | ✓ | ✗ | ✓ |
| Jelt | 9 | 703-9305 | Visugel cleaner | Spray | 50 | ✗ | ✗ | ✓ |
| Ambersil | 10 | 780-5269 | Ambersil anti-static spray | Spray | 400 | ✓ | ✗ | ✓ |
| Chemtronics | 11 | 329-2735 | Plastnglas antistatic foam spray | Spray | 400 | ✗ | ✗ | ✓ |
| AF | 12 | 434-8801 | Antistatic foaming cleaner | Spray | 300 | ✗ | ✗ | ✓ |

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## DISPENSERS

| Brand | Image | Stock No | Description | Bottle Material | Dissipative | Conductive | Anti-Static |
|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 798-9329 | Anti-splash pump dispenser | HDPE | ✓ | ✗ | ✗ |
| | 2 | 798-9323 | Anti-splash pump dispenser | HDPE | ✓ | ✗ | ✗ |
| | 3 | 798-9332 | Anti-splash pump dispenser | Bottle | ✓ | ✗ | ✗ |
| CHARLESWATER | 4 | 877-2545 | Take Along Locking Bottle | Bottle | ✗ | ✗ | ✗ |
| MENDA | 5 | 136-7193 | Blue Flux dispenser Needle Tip | Bottle | ✓ | ✗ | ✗ |
| | 6 | 761-7157 | Dissipative flux dispenser, 60ml, 20 GA | Bottle | ✓ | ✗ | ✗ |
| | 7 | 761-7169 | Blue dissipative bottle, 180ml one-touch | Bottle | ✓ | ✗ | ✗ |
| | 7 | 761-7163 | Blue dissipative bottle,180ml pure-touch | Bottle | ✓ | ✗ | ✗ |
| | 8 | 719-9949 | Black conductive bottle, 170ml one-touch | Spray | ✗ | ✓ | ✗ |
| | 9 | 761-7175 | Blue dissipative bottle,180ml take-along | Bottle | ✓ | ✗ | ✗ |

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# ESD Labels & Posters

## INTRODUCTION

The ESD Standard requires all electrostatic discharge sensitive devices and assemblies to be labelled with the 'susceptibility' symbol. It also stipulates that ESD protective packaging be labelled with the 'protection' symbol.

Part of a successful ESD Control Programme is the definition of the EPA which can be achieved by using signs, posters and floor marking tape.

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## KEY CONSIDERATIONS

The best known ESD cautionary symbol consists of a yellow hand in the act of reaching, deleted by a bar; all within a black triangle.



ESD
Susceptibility symbol

The 'susceptibility' symbol is intended to identify devices and assemblies that are susceptible to ESD. ESD labels using the 'susceptibility logo are used as follows:

- on individual components and related documents to state: 'this device is static sensitive; do not touch without appropriate precautions'
- on assemblies and related documents to state: 'includes static sensitive components; take appropriate precautions'
- as part of a sign identifying an area where sensitive devices are handled; to warn all who approach it that precautions are required

ESD labels using the 'protection' symbol should appear on ESD protective products such as shielding bags and boxes as well as on portable items such as field service mats, trolleys and garments.



ESD
Protective symbol

The letter underneath indicates the primary function of the item:

- C – conductive
- D – dissipative
- L – low charging
- S – shielding

Every EPA needs to be identified as such. Signs and posters are designed to attract attention and deliver a clear message to personnel and visitors.

## GLOSSARY OF TERMS

**Humidity card**
Humidity indicator cards are printed with moisture sensitive spots which respond to various levels of humidity with a visible colour change from blue to pink. The humidity inside dry an ESD bag can be monitored using a humidity card.

**Paper label, Vinyl label**
Labels that conform to BS EN61340-5-1: Protection of electronic devices from electrostatic phenomena.

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## LABELS & POSTERS

| Brand | Image | Stock No | Description | Text Message | Quantity | Material | Width (mm) | Height (mm) | Self Adhesive |
|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 211-1231 | ESD logo label | n/a - logo only | 1 | Paper | 12 | 12 | ✓ |
| | 1 | 211-1247 | ESD logo label | n/a - logo only | 1 | Paper | 5 | 5 | ✓ |
| | 1 | 125-2362 | Logo Label | n/a - logo only | 1000 | Paper | 25 | 25 | ✓ |
| | 1 | 125-2363 | Logo Label | n/a - logo only | 1000 | Paper | 50 | 50 | ✓ |
| | 2 | 364-3638 | Self adhesive label | Observe Precautions For Handling Electrostatic Discharge Sensitive Devices | 1 | Vinyl | 50 | 100 | ✓ |
| | 2 | 364-3650 | Self-adhesive poster | Attention ESD Protected Area Observe Precautions For Handling Electrostatic Discharge Sensitive Device | 1 | Vinyl | 600 | 300 | ✓ |
| | 2 | 211-1196 | Rigid poster | Attention ESD Protected Area Observe Precautions For Handling Electrostatic Discharge Sensitive Devices | 1 | Rigid Plastic | 150 | 300 | ✗ |
| | 3 | 251-4012 | Self-adhesive poster | Attention You Are Now Leaving This Esd Protected Area | 1 | Vinyl | 600 | 300 | ✓ |
| | 2 | 211-1180 | Self adhesive poster | Attention ESD Protected Area Observe Precautions For Handling Electrostatic Discharge Sensitive Device | 1 | Vinyl | 150 | 300 | ✓ |
| | 1 | 364-3565 | Paper label | Attention ESD Protected Area Observe Precautions For Handling Electrostatic Discharge Sensitive Devices | 1000 | Paper | 10 | 25 | ✓ |
| | 4 | 211-1253 | PWarning poster | ESD Warning | 5 | Paper | 420 | 610 | ✗ |
| | 5 | 211-1203 | Rigid poster | Attention ESD Protected Area Observe Precautions For Handling Electrostatic Discharge Sensitive Devices | 1 | Rigid Plastic | 300 | 600 | ✗ |

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## LABELS & POSTERS

| Brand | Image | Stock No | Description | Text Message | Quantity | Material | Width (mm) | Height (mm) | Self Adhesive |
|---|---|---|---|---|---|---|---|---|---|
| RS PRO | 1 | 364-3571 | Paper label | Attention | 1000 | Paper | 16 | 38 | ✓ |
| | 1 | 364-3593 | Self adhesive label | Attention ESD Protected Area Observe Precautions For Handling Electrostatic Discharge Sensitive Device | 100 | Vinyl | 25 | 45 | ✓ |
| | 2 | 364-3622 | Label | Earth | 100 | Vinyl | 150 | 300 | ✓ |
| | 1 | 364-3587 | Paper label | Attention ESD Protected Area Observe Precautions For Handling Electrostatic Discharge Sensitive Device | 1000 | Paper | 25 | 45 | ✓ |
| | 1 | 211-1225 | Paper label | Attention ESD Protected Area Observe Precautions For Handling Electrostatic Discharge Sensitive Device | 1000 | Paper | 37 | 76 | ✓ |
| | 1 | 550-549 | Paper label | Attention Observe Precautions For Handling Electrostatic Sensitive Device | 1000 | Vinyl | 13 | 45 | ✓ |
| | 3 | 364-3616 | Label | Earth Grounding Point | 1000 | Vinyl | 36 | 36 | ✓ |
| SCS | 4 | 838-1054 | Military Label | Attention-Observe Precautions For Handling Electrostatic Sensitive Devices | 500 | Gloss Paper (Face), Kraft (Liner) | 50 | 50 | ✓ |
| | 5 | 838-1105 | Humidity Card | Humidity Indicator | 100 | Blotting Paper Impregnated With Cobaltous Chloride | 50 | 76 | ✗ |
| | 5 | 838-1102 | Humidity Card | Humidity Indicator | 125 | Blotting Paper Impregnated With Cobaltous Chloride | 50 | 76 | ✗ |
| | 5 | 838-1111 | Humidity Card | Humidity Indicator | 200 | Blotting Paper Impregnated With Cobaltous Chloride | 39 | 120 | ✗ |

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